"A STUDY TO ASSESS THE EFFECTIVENESS OF ALOE VERA GEL IN HEALING OF PRESSURE ULCERS AMONG PATIENTS ADMITTED AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI - 03."

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CHENNAI – 32.

in partial fulfillment of requirements for the degree of

MASTER OF SCIENCE IN NURSING

APRIL 2014

CERTIFICATE

This is to certify that this dissertation titled **"A STUDY TO ASSESS THE EFFECTIVENESS OF ALOE VERA GEL IN HEALING OF PRESSURE ULCERS AMONG PATIENTS ADMITTED AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI - 03."** is a bonafide work done by Mrs. A. Thenmozhi, College of Nursing, Madras Medical College, Chennai – 600003 submitted to The TAMILNADU DR.M.G.R. MEDICAL UNVERSITY, CHENNAI in Partial fulfillment of the requirements for the award of Degree of Master of Science in Nursing, Branch I, MEDICAL SURGICAL NURSING, under our guidance and supervision during the academic period from 2013 – 2014.

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ABSTRACT

STATEMENT OF THE PROBLEM: " A study to assess the effectiveness of Aloe vera Gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital, Chennai - 03."

A Quasi experimental study design was used to evaluate the effectiveness of Aloe Vera Gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital, Chennai – 03. The tool used for this study consists of demographic data, proforma related to Personal Hygiene, Barbara Braden and Nancy Bergstorm Pressure Ulcer Risk Assessment Scale, and PUSH (Pressure Ulcer Scale for Healing). The population of this study were 60 pressure ulcer subjects, 30 samples from Experimental group and 30 samples from the control group. Sample for the study were selected by using Non random convenient sampling technique. Conceptual framework used for the study was Wiedenbach's Helping Art of Clinical Nursing Model. Routine dressing was given to the Control group and Experimental group. Along with the routine dressing Aloe Vera Gel was applied to Experimental group. The Pressure ulcer was assessed with the PUSH Scale (Pressure Ulcer Scale for Healing) before and after the intervention. Aloe Vera Gel application was applied once a day for both Experimental and Control group. The score was assessed on 1^{st}, 5^{th}, 10^{th} and 15^{th} day of application of Aloe Vera Gel. The findings of the study revealed that on an average, in experiment group, Subjects were having the healing mean score of **7.50** and in control group, subjects were having **5.93** score. It shows the effectiveness of study and found to be very effective in healing of pressure ulcers. Pressure ulcers are common unresolved problem and the nursing professionals can contribute to resolve the problem by implying the complementary therapy type of nursing intervention like Aloe Vera Gel Application to the Pressure ulcer subjects.

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LIST OF ABBREVIATION

S.NO	ABBREVATIONS	EXPANSIONS
1.	**AV**	Aloe Vera
2	**CI**	Confidence Interval
3	**DF**	Degree of Freedom
4	**Fig**	Figure
5	**H1 H2**	Research Hypothesis
6	**M**	Mean
7	**MSc(N)**	Master of Science in Nursing
8	**No**	Number
9	**PUSH**	Pressure Ulcer Scale for Healing
10	**P**	Probability level
11	**SD**	Standard Deviation
12	**X2**	Chi-square

CHAPTER -I

INTRODUCTION:

"The most important practical lesson that can be given to

Nurses is to teach them what to observe"

-Florence Nightingale.

Skin integrity is important to maintain and restore health and nurses play a vital role in assessing and intervening to prevent skin disruptions and promote wound healing.

Impaired sensory function and the inability to make appropriate positional changes are the most influential factors in the development of pressure ulcers. The nurse take care of the activities of daily living of a subject and should provide holistic care.

INTRINSIC CONTRIBUTING FACTORS INCLUDE:

- Malnutrition
- Dehydration
- Impaired mobility
- Chronic conditions
- Decreased LOC
- Infection
- Advance age
- Steroid use
- Pressure ulcer present
- Impaired sensation

EXTERNAL CONTRIBUTING FACTORS INCLUDE:

- Pressure
- Friction
- Moisture
- Incontinence
- Shear

Other factors such as loss of vasomotor control which results in lowering of tissue resistance to pressure spasticity with resultant shearing forces between bony surfaces, skin maceration from exposure to moisture, trauma, such as adhesive tape or sheet burns, nutrition deficiency, low serum protein and anemia will reduce tissue resistance to pressure, poor general skin conditions and secondary infection.

A wound is a break in continuity of skin. It may be small or it may be deep or it may be extensive. It is painful because nerve endings of pain in the skin are stimulated during injury. If the wound affects the epidermis only, healing will take place fastly and the destroyed cells being replaced from the basal layer. But the wound affects dermis, the basal layer cells are destroyed then the epidermal cells are not replaced by the own kind cells, but by fibrous tissue. This forms a scar and it may extend the full depth of the wound into dermis and the tissue below it.

When a pressure ulcer occurs, the length of stay in hospital and overall cost of treatments are difficult to approximate. Although treatment of pressure ulcers is more costly, than prevention, when an ulcer develops, the increased cost of nursing care alone is estimated as 50%.

The management of an open wound offers a real challenge to the nurse caring for it. The method of care, the agents used and the dressing material are determined by the characteristics of the wound. Multidisciplinary approach primarily includes dressing of wounds. The art of dressing wound has constituted the whole of medicine, wound management and infection control.

Pressure ulcers are skin ulcers that typically develop over bony areas, such as the bones, spines, hips and elbows. Also known as bedsores, pressure ulcers are a common problem for palliative care subjects, as mobility decreases and subjects spend more time in bed.

Pressure ulcers are painful and can be difficult to treat. Preventing pressure ulcer is critical to maintaining comfort and treating them promptly is essential. The development of pressure ulcer is one of the greatest preventive complications for the subjects who are confined to the bed for a long time. A single indiscretion in care can lead to persistent or repeated ulceration with result in hospitalization, loss of independence and complete disruption of any social adjustment.

Topical therapy of pressure ulcer are to categorize in which the greatest number of changes in treatment have occurred. Munro (1940) stated that as long as the ulcer is kept dry and free from contamination it can heal well.

With recent years different medications are in use for curing the pressure ulcers.

- Gelatin products
- Debrisan
- Aluminium containing anteriords (alterngel)
- Povidone iodine
- Insulin
- Honey

- Poly urethane adhesive and
- Anti microbial powder

The subjects are nursed on rubberized coir beds because of the scarcity of waterbeds and alpha beds. Rubberized coir bed produce heat and increase the sweat at the back and this excessive moisture is produces ulcers.

When disruptions have occurred, nurses reequipped with the accepted knowledge, skills and motivation for skin integrity assessment and intervention can contribute a great deal to the Health and quality of life.

Effective treatment of wound care saves lives whereas ignoring them may prove fatal. Hence care and the treatment of wound is very important. Skin integrity is important to maintain and restore health and nurses play a vital role in assessing and intervening to prevent skin disruptions and promote wound healing.

Aloe vera has been used historically to improve wound healing and contains several constituents that may be important for this effect. Aloe is universally recognized as antimicrobial, antiviral, antibacterial, and antifungal. They do best in bright sunlight and do not tolerate temperatures below 45 degrees. For this reason, in most parts of the country, aloe vera is raised as a houseplant. It is a popular remedy for sunburn and skin rashes.

When the investigator was posted in medical, surgical and orthopedic wards, she observed the subjects suffering from pressure ulcer and their inability for self care activities. Delayed pressure ulcer healing, prolongs hospitalization stay. Hence the investigator chosen this topic for study.

1.1 NEED FOR THE STUDY:

Pressure ulcers are caused by sustained pressure being placed on a particular part of the body. While pressure is the main causative factor, many others – such as shear, friction, denervation, poor nutrition, age and smoking – can also contribute . Studies have suggested that, at any given time, 3-10% of hospitalized persons have pressure ulcers and 2.7% develop new pressure ulcers. Among a selected population, the incidence rate for the development of a new pressure ulcer has been demonstrated to be much higher, with a range of 7-30%. Overall, subjects with pressure ulcers are important users of medical resources. They require 50% more nursing time, remain hospitalized for significantly longer periods, and incur higher hospital charges.

Pressure ulcers appear in very ill subjects and in states of prolonged immobilization. They are quite frequent in intensive care units and in paraplegic individuals. The expenses for their care are huge, due to the complicity of the long lasting treatment. Dressing materials of low cost and quicker healing of wound are indeed of a better choice.

In a study a thorough physical examination is performed describing the specific location of the pressure ulcer based on the underlying bony prominence (eg, sacral, ischial, trochanteric). 75% of pressure ulcers develop around the pelvic girdle with ischium, sacrum and trochanter being the commonest sites. Infection of the pressure ulcer is suggested by wound edge erythema, foul odor, purulent discharge, and necrotic bone. The level of tissue injury (ie, to epidermis, dermis, subcutaneous fat, muscle, bone, joint) is determined.

This pressure interrupts the blood supply to the affected area of skin. Blood contains oxygen and other nutrients that are needed to help keep tissue healthy. Without a constant blood supply, tissue is damaged and will eventually die.

The lack of blood supply also means that the skin no longer receives infection-fighting white blood cells. Once an ulcer has developed, it can become infected by bacteria.

CAUSE FOR PRESSURE ULCER

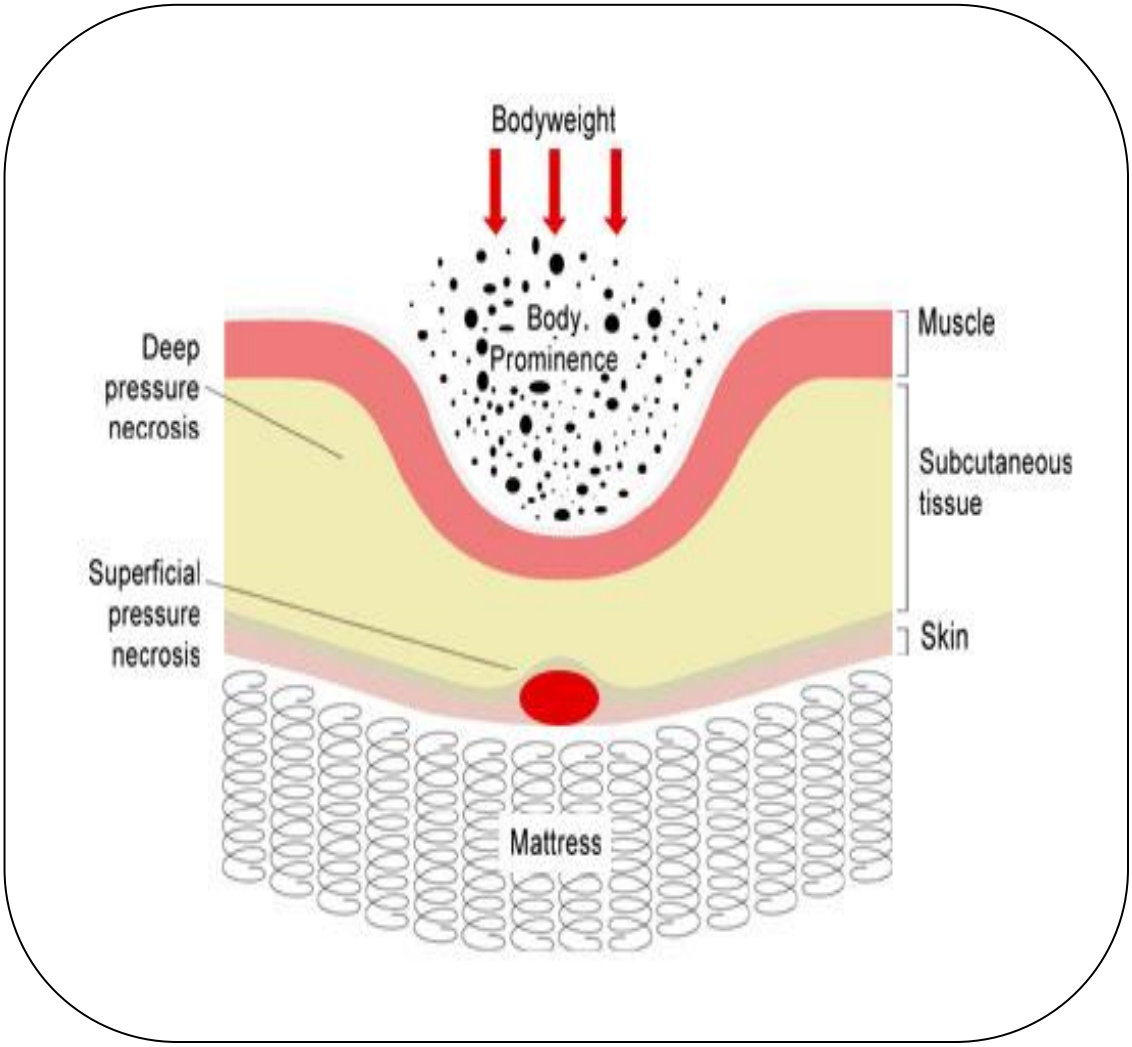

FIGURE 1

COMMON SITES FOR PRESSURE ULCER DEVELOPMENT INCLUDE:

LATERAL POSITION

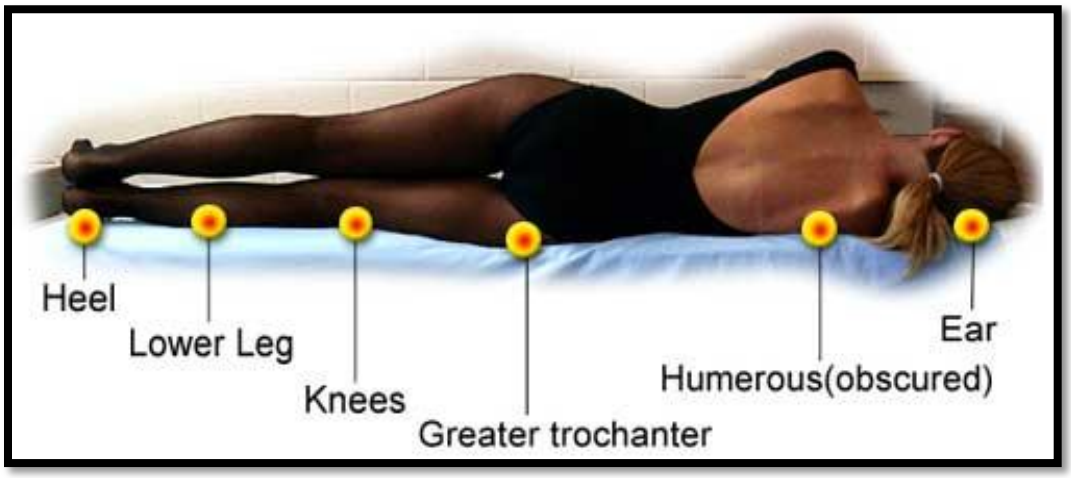

FIGURE 2

SUPINE POSITION

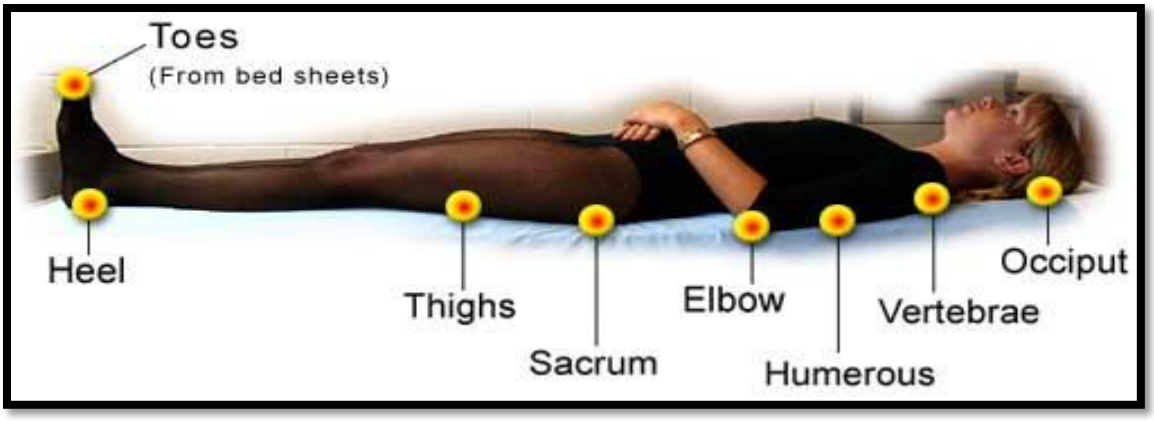

FIGURE 3

PRONE POSITION

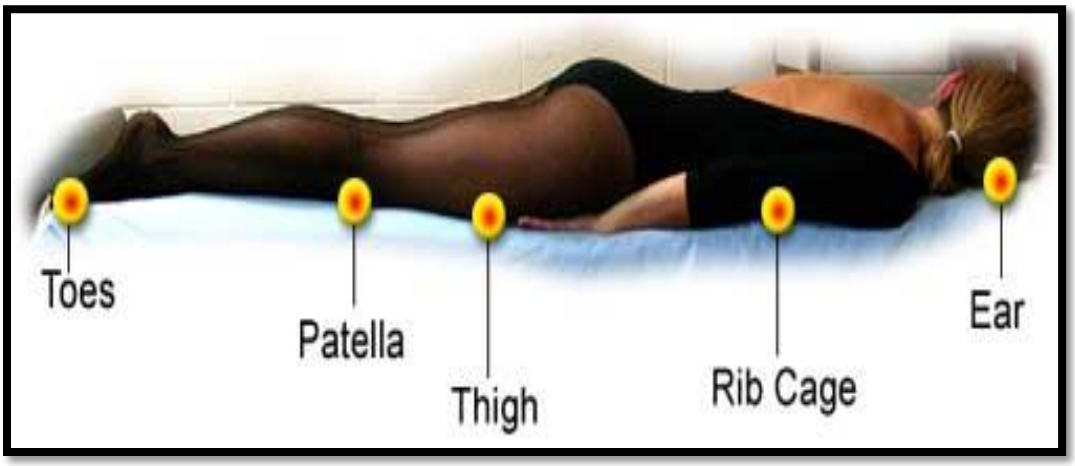

FIGURE 4

STAGES OF PRESSURE ULCER:

Several classification systems of pressure ulcers are available based on this level of injury. One widely accepted classification system has 4 stages. Pressure ulcer staging from Barczak et al is as follows:

- **Stage 1**: There is redness on your skin that does not go away. It might look like a red spot. If your skin is dark, the spot might look purple. There are no cuts in the skin. The skin could be warm. The area could be swollen.

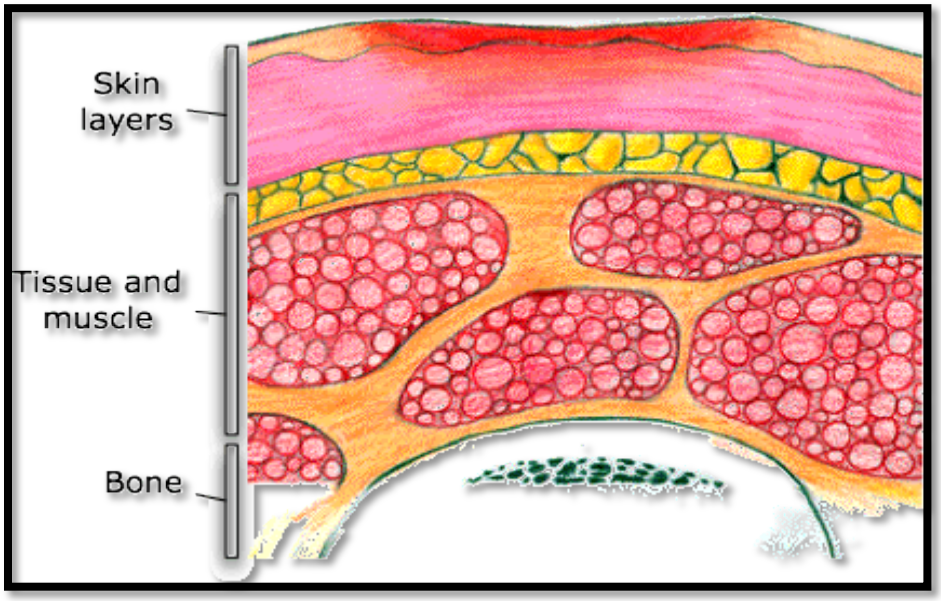

FIGURE 5

Stage 2: There is a sore that is not very deep. Some skin is gone. It might look like a scrape, blister, "zit" or crater. Your doctor can see if this is a scrape or a stage 2 pressure ulcer

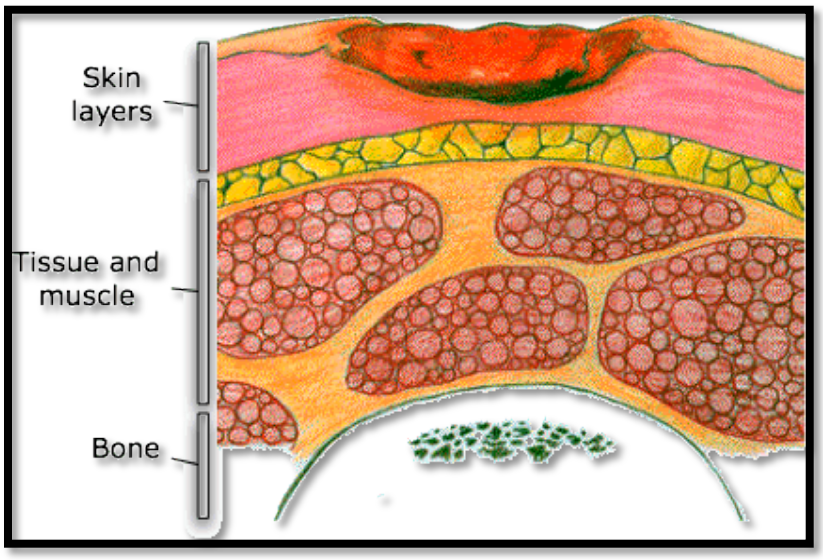

FIGURE 6

Stage 3: Skin is gone. Some of the flesh under the skin is also gone.

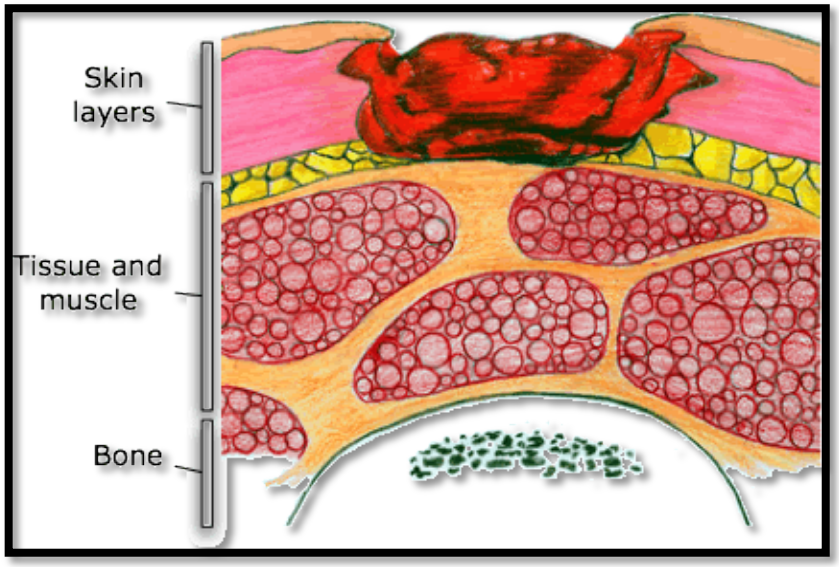

FIGURE 7

- **Stage 4**: Skin and flesh is gone all the way down to the bone.

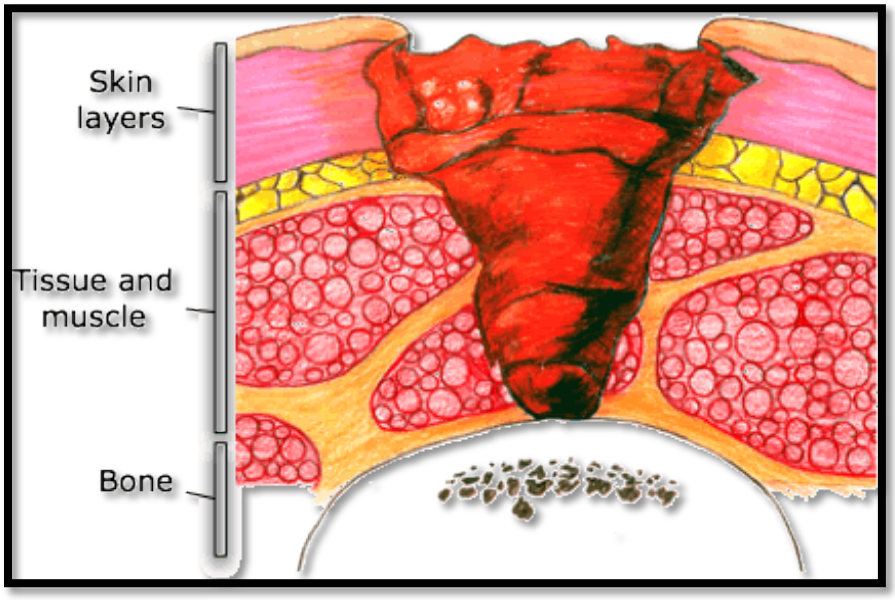

FIGURE 8

Increased risk

There are several factors that increase the risk of developing pressure ulcers. These include:

- **Mobility problems** – anything that affects your ability to move some or all of your body
- **Poor nutrition** – for your skin to remain healthy, it requires nutrients that can only be supplied by eating a nutritious diet
- **An underlying health condition** that disrupts your blood supply or makes your skin more vulnerable to injury and damage
- **Being over 70 years old**
- **Urinary incontinence and/or bowel incontinence**
- **Serious mental health conditions**

Each year, more than 2.5 million people in the United States develop pressure ulcers. In acute care settings in the United States, the incidence of bedsores is 0.4% to 38%; within long-term care it is 2.2% to 23.9%, and in home care, it is 0% to 17%. Similarly, there is wide variation in prevalence: 10% to 18% in acute care, 2.3% to 28% in long-term care, and 0% to 29% in home care. There is a much higher rate of bedsores in intensive care units because of immuno - compromised individuals, with 8% to 40% of ICU subjects developing bedsores.

However, pressure ulcer prevalence is highly dependent on the methodology used to collect the data. Using the European Pressure Ulcer Advisory Panel (EPUAP) methodology there are similar figures for pressure ulcers in acute hospital subjects. There are differences across countries, but using this methodology pressure ulcer prevalence in Europe was consistently high, from 8.3% (Italy) to 22.9% (Sweden).

Pressure ulcers can trigger other ailments, cause subjects considerable suffering, and be expensive to treat. Some complications include autonomic dysreflexia, bladder distension, osteomyelitis, pyarthros, sepsis amyloidosis, anemia, urethral fistula, gangrene and very rarely malignant transformation (Marjolin's ulcer - secondary carcinomas in chronic wounds).

The most common organisms found in pressure ulcers include Staphylococcus aureus, Proteus mirabilis, Pseudomonas aeruginosa, Bacteroides fragilis, and Bacteroides asaccharolyticus. When more than 100,000 organisms/ gram of tissue, are growing on quantitative cultures obtained from the pressure ulcer wound, debridement and aggressive wound care are required before considering wound reconstruction. Wound infection can be confirmed by quantitative tissue culture with more than 100,000 organisms in culture (clostridial and group B streptococcal infections can occur at lower bacterial counts).

Sores often recur because subjects do not follow recommended treatment or develop seromas, hematomas, infections, or dehiscence. In some subjects, complications from pressure ulcers can be life-threatening. The most common causes of fatality stem from renal failure and amyloidosis. Pressure ulcers are also painful, with subjects of all ages and all stages of pressure ulcers reporting pain. Hence it is necessary to treat and prevent complications of pressure ulcers.

Medical Therapy

Conservative treatment of pressure ulcers includes appropriate wound care, debridement of necrotic tissue, optimization of nutrition, release of pressure, and minimization of muscle spasticity to provide the subject with the best opportunity to heal by secondary intention.

- Stage 1 and 2 pressure ulcers are treated conservatively.
- Stage 3 and 4 pressure ulcers must be treated conservatively because of coexisting medical problems.

Infection of pressure ulcer wounds can affect treatment. To optimize wound healing potential, the wound should be in bacteriologic balance. Pressure ulcer infection is suggested by the presence of necrotic tissue, wound edge erythema, purulent discharge, and a foul odor.

For conservative treatment, remove all necrotic tissue. If necrotic tissue is minimal, moist-to-dry dressings can be used with modified Dakin solution or isotonic sodium chloride solution. More extensive necrosis may require surgical debridement at the bedside or in the operating room.

Once the wound is clean, Aloe vera Gel can be used to reduce the bacterial load, which has been demonstrated to hasten wound healing. Alternatively, a negative pressure dressing can be considered for deep wounds that are clean and in bacteriologic balance. The negative pressure dressing has been found to decrease healing time and bacteria.

Surgical Therapy

In general, stage 3 and 4 pressure ulcers require flap reconstruction.

The choice of flap for reconstruction depends on the location of the ulcer .

Aloe vera:

Aloe vera (syn. Aloe barbadensis Mill., Fam. Liliaceae), also known as Barbados or Curaçao Aloe, has been used in traditional and folk medicines for thousands of years to treat and cure a variety of diseases.

The most common folk use of aloe has been for the treatment of burn wounds and specifically to aid in the healing process, reduce inflammation, and tissue scaring.

The gel was described by Dioscorides and used to treat wounds and mouth infections, soothe itching and cure sores.

FIGURE 9

Commercial preparation used for the study : Himalaya aloe vera gel - herbal product.

Dose: 30% Aloe vera in a hydrophilic emulsion form once daily to affected area.

Mechanisms of Action :

- Stimulation of macrophage and fibroblast activity, increased collagen and proteoglycan synthesis
- Mannose-6-phosphate binds to growth factor receptor on fibroblasts and enhances their activity.
- Macrophage activation through increased nitric oxide synthase activity by acemannan, leading to release of fibrogenic cytokines.
- Upregulation of phagocytosis and fungicidal activity of macrophages by acemannan.
- Acemannan and other cell wall biomaterial may promote stability of growth factors and prolong stimulation of granulation tissue.
- Inhibition of Thromboxan A_2.
- Anti-inflammatory effect of plant sterols like lupeol, campesterol, and β-sitosterol through bradikinase activation, prostaglandin F2 and E2, as well as thromboxane A2 inhibition and inhibition of IL-10 secretion.
- Inhibitory effect on release of reactive oxygen species from human neutrophils by reducing intracellular free calcium levels.
- Increase in mRNA expression of metalloproteinases and plasminogen activator may lead to angiogenic activity in endothelial cell

An experimental study was conducted in Iran, use of topical application of aloe vera gel on wounds, 49 subjects were randomly assigned to receive aloe or placebo. Wound healing at the end of the second post operative week was

significantly greater in aloe vera group compared with placebo group ($p<0.001$).Subjects needed fewer analgesics post operatively ($p<0.001$).

The slightly sticky gel inside each leaf soothes the skin and, according to the National Institutes of Health, studies have shown aloe vera can help promote healing of the skin . Reports state that the government exported Rs 10000 crores of medicinal plant like aloe vera by the end of 2010. Transparent gel from the pulp of the fresh leaves of aloe vera has been used topically for thousands of years to treat wounds, burns, and numerous other dermatologic conditions. The aloe vera gel has immune modulatory properties that may improve wound healing and skin inflammation.

Aloe vera has been used historically to improve wound healing and contains several constituents that may be important for this effect. A group of three subjects who had chronic skin ulcerations for 5, 7, and 15 years, respectively, had a rapid reduction in ulcer size after the application of aloe gel on gauze bandages to the ulcers, according to a preliminary report. A controlled study found most subjects with pressure ulcers had complete healing after applying an aloe hydrogel dressing to the ulcers every day for ten weeks. Hence the researcher adopted to investigate this study.

The functions of Aloevera are:

- Boosts the oxygenation of your blood.
- Eases inflammation and soothes arthritis pain.
- Protects the body from oxidative stress.
- Prevents kidney stones and protects the body from oxalates in coffee and tea.
- Alkalizes the body, helping to balance overly acidic dietary habits.
- Cures ulcers, IBS, Crohn's disease and other digestive disorders.
- Reduces high blood pressure natural, by treating the cause, not just the symptoms.

- Nourishes the body with minerals, vitamins, enzymes and glyconutrients.
- Accelerates healing from physical burns and radiation burns.

The investigator after learning these factors recognized the importance of providing research based nursing care for subjects with pressure ulcer and was motivated to conduct this study to bring about relief from sufferings, promote a sense of well being and improve the quality of life of these subjects. This enabled the investigator to carry out an experimental study to assess the effectiveness of aloe vera gel on subjects with pressure ulcer.

1.2 STATEMENT OF THE PROBLEM:

A study to assess the effectiveness of Aloe vera Gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital, Chennai - 03.

1.3 OBJECTIVES:

- To assess the pressure ulcers among bedridden subjects in control and experimental group.
- To determine the effectiveness of Aloe Vera Gel in wound healing among experimental group.
- To compare the wound healing process among the control and experimental group
- To find out the association between wound healing process and Aloe Vera Gel with selected demographic variables among experimental group.

1.4 OPERATIONAL DEFINITIONS:

1. Effectiveness:

Refers to the action of Aloe Vera Gel in healing of pressure ulcers, at ulcer site that is the positive outcome expected by the researcher.

2. Aloe vera gel:

Aloe vera is an amazing mixture of more than 200 constituents, including polysaccharides (a complex carbohydrate), enzymes (complex proteins), glycoproteins, amino acids, vitamins and minerals which helps to reduce inflammation, speed the healing of wounds, ameliorate pain, improve vascular flow, and reduce scarring.

In this study, the commercially available sterile aloe vera gel is applied on pressure ulcers.

3. Healing:

Healing means development of new granulation tissue over the pressure ulcer area to form scar tissue and reduction in the size of the surface area of the pressure ulcer.

4. Pressure ulcer:

It is a localized area of cellular destruction resulting from prolonged pressure being exerted on the skin at various points in bed ridden subjects.

5. Subjects:

Persons suffering from bedsore with mild grade or Grade – I pressure ulcer.

1.5 HYPOTHESIS:

H1: The Aloe Vera Gel dressing will have a significant effect in healing the pressure ulcers.

H2: There will be significant association between healing of pressure ulcers and selected socio-demographic variables.

1.6 ASSUMPTIONS:

1. Subjects confined to bed for a longer period may develop pressure ulcer.
2. Subjects those who have limitations to perform self care activities may develop pressure ulcers.
3. Aloe Vera Gel dressing will heal the pressure ulcer quickly.

CHAPTER II

REVIEW OF LITERATURE

"Before you read, pre read"

- Van Doren

The review of literature is a broad, comprehensive, in depth, systematic and critical review of scholarly publication, unpublished scholarly print materials audio visual material and personal communication.

A literature review is a written summary of the state of existing knowledge on a research problem. The task of reviewing research literature involves the identification, selection, critical analysis and written description of existing information on a topic, **(Polit and Hungler, 1999).**

2.1 REVIEW OF RELATED LITERATURE:

The research has reviewed the relevant literature in support of problem statement of this study. Literatures from 1959 to 2013 were reviewed. Literature review was carried out in support of

Part I: Studies related to Pressure ulcers.

Part II: Studies related to Aloe Vera.

Part III: Studies related to Effectiveness of aloe vera on wounds healing.

Part IV: Studies related to Wound dressing

PART I: STUDIES RELATED TO PRESSURE ULCERS:

Alves P, Mota F, Ramos (2013) conducted a study with the objective to compare the incidence and prevalence of pressure ulcers in community settings and care differentiated and interpret these values as indicators of quality of care. Different measurement instruments were utilised to measure the incidence and prevalence of pressure ulcers. Prevalence varies in Europe between 3 and 28%, and the locations with the highest incidences services and intensive care medicine. The study concluded that A system of classification of pressure ulcers in their different categories and the differential diagnosis with injuries humidity reduces the misclassification of UP.

Chou R, Dana (2013), conducted a study to assess the clinical utility of pressure ulcer risk assessment instruments and the comparative effectiveness of preventive interventions in persons at higher risk.. Evidence on the effectiveness of nutritional supplementation, repositioning, and skin care interventions versus usual care was limited and had methodological shortcomings, precluding strong conclusions. More advanced static support surfaces are more effective than standard mattresses for preventing ulcers in higher-risk populations.

Dermatol Ther.(2013) reported that Chronic lower extremity ulcers are a significant burden on Subjects and health care systems worldwide. Although relatively common, these wounds can be difficult to treat and present a challenge to physicians. Treatment has often been based on anecdotal accounts; however, there is a growing emphasis on using evidence-based conclusions to guide clinical decisions. In this review article, the standard of care and adjuvant therapies of venous leg ulcers and diabetic foot ulcers are presented from an evidence-based perspective.

Johanssen E (2013) who conducted a study pertaining to pressure ulcer (PU) prevalence, incidence and prevention practices from the context of Scandinavia, Iceland and Ireland. Mean prevalence in Norway was 17% (4.8-29%) in Ireland was 16% (4-37%), in Denmark was 15% (2.2-35.5%) and in Sweden was 25%, (0.04-42.7%). Prevalence in Iceland was 8.9%. In acute care, mean prevalence was 21% (0-42.7%) and in long stay was 12% (2.4-23.7%). Mean incidence in acute care setting was 17.6%, (1.4-49%); in long stay was 6.63% (3.1-8.4). Results were consistently highest in acute care and hospice settings, and lowest in the care of the older person setting.

Moore Z, et al (2013) conducted study to provide a critical appraisal of nurses risk assessment and pressure ulcer (PU) preventive practices across Scandinavia, Iceland and Ireland. Risk assessment practice was primarily investigated in the acute care setting and was found to be irregular, based on both numeric scales and clinical judgments. The results concluded that the potential Subject safety implications, clinical practice could benefit from exploration and identification of practical methods for improving actual pressure ulcer preventive practice.

Smith ME (2013) reported that Pressure ulcers affect as many as 3 million Americans and are major sources of morbidity, mortality, and health care costs. Randomized trials and comparative observational studies of treatments for pressure ulcers in adults and noncomparative intervention series (n > 50) for surgical interventions and evaluation of harms. The study concluded that healing of pressure ulcers in adults is improved with the use of air-fluidized beds, protein supplementation, radiant heat dressings, and electrical stimulation.

Reswick and Rogers (2000) said that effective prevention and treatment measures depend on a comprehensive care plan, which includes scheduled turning and body repositioning. The frequency and the interval between turning seems to

be more critical than pressure in the production of pressure sores. This is why nurses have adopted the practice of turning Subjects every 2 hours.

"**An ounce of prevention is worth a pound of cure"**

Kanj et al (1998) states that, pressure ulcers are localized areas of tissue necrosis that result from unrelieved pressure. They are graded or staged according to their tissue damage observed. The main etiologic factors include pressure, shearing forces, friction and moisture. The clinical course may be complicated by several conditions including friction, sepsis, osteomyelitis, fistulas and carcinoma.

Dangoisse et al (1997), mentioned in their article that pressure is the primary pathogenic factor in the development of decubitus ulcers. Other major factors are shearing forces, friction and moisture. Significant risk factors are immobility, age related diseases, nutritional status, medications and smoking. Prevention is essential and is best achieved by identification of high-risk Subjects. The therapeutic approach is based on the grade of pressure ulcer.

Kate O Dea (1997) quoted the following key issues for reducing the incidence of pressure damage.

- Early assessment of Subject risk.
- Education of all staff on the causes and consequences of pressure sores and the importance of prevention.
- Multidisciplinary team approach.
- Mattress replacement programmes.
- Increased availability of pressure relieving mattresses, beds and settings.
- Replacement of poor quality and absolute equipment.
- Regular audits of pressure damage.
- (Prevalence and/or incidence) to ensure the issue remains high profile.
- Introduction of strategically organized services and

- Trust support

- **The Knool Assessment tool** developed eight risk factors including general status of health, mental status, activity, mobility, incontinence, oral nutrition intake, oral fluid intake and predisposing disease. The total score ranges from 0 to 33. A higher total score indicates a higher risk for pressure ulcer development with a risk score 12 or greater. The last instrument is the Braden Scale which was developed based on the risk factors in a nursing home population. Braden scale composed of six subscales viz.
- Sensory perception,
- Activity
- Mobility
- Nutrition
- Friction and
- Shear.

  The total score ranges from 6 to 28. The lower total score indicates higher risk for pressure ulcer development. (Braden and Bergstrom 1989). This instrument is highly reliable for identifying clients at greatest risk for pressure clcer (Bergstrom 1987).

PART II: STUDIES RELATED TO ALOE VERA:

Bastian P, Fal AM (2013) reported that Aloe arborescens (Candelabra Aloe) has been used in the treatment of upper respiratory tract infections in Central and Eastern European countries for many decades. Clinical data showed that immune modulatory, anti-inflammatory, and antiviral effects contribute to its therapeutic efficacy. The study concluded that A. arborescens is a valuable addition to the spectrum of herbal medicinal products for the treatment and prophylaxis of upper respiratory tract infections, in particular common cold, in adults and children.

Maier HM, Ilich JZ, (2013) studied the efficacy of nutrition supplementation in wound healing. Studies in which diabetic wounds/foot ulcers were treated with specific nutritional or herbal supplements were selected. The most notable effect of supplementation with curcumin, L-Arginine, or vitamin E have been shown. More studies need to be conducted to determine the efficacy of these nutritional supplements in promoting wound healing.

Ali Zamani (2011), conducted a randomized double-blind clinical trial to assess the efficacy of Aloe vera compared with betamethasone 0.1% cream on pruuritis Subjects. The rate of improvement in the pruritus severity [defined as being classified in a less severe category (mild, moderate and severe)] was found to be comparable between the groups ($p\_>\_0.05$). Vera/Olive oil cream was effective as betamethasone 0.1% in the treatment of sulfur mustard-induced chronic skin complications and might serve as a promising therapeutic option for the alleviation of symptoms in mustard gas-exposed Subjects.

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Mansourian (2011), conducted a study to compare the therapeutic effects of Aloe Vera mouthwash with triamcinolone acetonide 0.1% on oral lichen planus (OLP). A total of 46 Subjects with OLP were included in the study. The Subjects were randomly divided into 2 groups. Each group was treated with received AV mouthwash or TA. Both AV and TA significantly reduced visual analogue scale score, Thongprasom score and size of the lesions after treatment ($P < 0.001$) and after 2 months of discontinuation of the treatment ($P < 0.001$). In the AV group, 74% of Subjects and in the TA group 78% of Subjects showed some degrees of healing in the last follow AV mouthwash is an effective substitute for TA in the treatment of OLP.

Sarakarn P (2010), conducted a study to compare the efficacy of AV and 0.1% Triamcinolone Acetonide (TA) in mild to moderate plaque psoriasis. A randomized, comparative, double-blind, 8-week study was designed. 80 Subjects were randomly received AV or 0.1% TA cream and their clinical response were evaluated using the Psoriasis Area Severity Index (PASI) and the Dermatology Life Quality Index (DLQI). Aloe Vera cream may be more effective than 0.1% TA cream in reducing the clinical symptoms of psoriasis; however, both treatments have similar efficacy in improving the quality of life of Subjects with mild to moderate psoriasis.

Huseini HF et al (2009), suggested that aloe (Aloe vera L.) leaf gel may positively affect the blood glucose and lipid levels in dyslipidemic type 2 diabetic SubjectsThe aloe gel lowered the fasting blood glucose, HbA1c, total cholesterol, and LDL levels significantly ($p = 0.036$, $p = 0.036$, $p = 0.006$, and $p = 0.004$, respectively) without any significant effects on the other blood lipid levels and liver/kidney function tests ($p > 0.05$) compared with the placebo at the endpoint. The results suggested that aloe gel may be a safe anti-hyperglycemic and anti-hypercholesterolemic agent for hyperlipidemic type 2 diabetic Subjects.

Rajasekharan et. al., (2005), conducted a study to assess the effectiveness of Aloe Vera gel in Diabetes Subjects. The total sample size was 30 Subjects. Oral administration of Aloe Vera gel extract at a concentration of 300mg /kg /day was given. Evaluative approach was used .Blood glucose level was assessed on the 7 day. The mean, SD of Subjects in Aloe Vera gel ingestion was evaluated .The Aloe Vera gel among Diabetes Subjects was more effective in reducing the blood sugar level (P>0.05).

PART III: STUDIES RELATED TO EFFECT OF ALOE VERA ON WOUND HEALING:

Dat AD, Poon F, Pham KB, Doust J (2012) In people with chronic wounds, one trial found statistically significant difference in pressure ulcer healing with Aloe vera (RR 0.10, 95% CI -1.59 to 1.79) and in a trial of surgical wounds healing by secondary intention Aloe vera significantly improved healing (mean difference 30 days, 95% CI 7.59 to 52.41). Clinical heterogeneity precluded meta-analysis.

Hajhashemi V, Ghannadi A (2012) reported that Topical application of Aloe formulated gel (100%) promoted healing rate of incisional wound. In carrageenan test, revealed significant (P<0.05) anti-inflammatory activity. Results showed that A. littoralis is a potential wound-healing and anti-inflammatory agent.

Rahmani. N (2010), conducted a study to assess the effects of Aloe Vera cream in reducing postoperative pain, and its promotion of wound healing. Application of Aloe Vera cream on the surgical site is effective in reducing postoperative pain, healing time, and analgesic requirements in the Subjects compared with the placebo group**.**

Mahdavi M.R (2009), conducted a clinical study to evaluate the efficacy of Aloe Vera Cream for partial thickness, burn wounds and compare its results with those of silver sulphur diazine. The results clearly demonstrated the greater efficacy of Aloe Vera over SSD cream for treating second degree burns.

Berger J . (2006) conducted a study to find the effectiveness of Aloe Vera gel and its effects on epithelialization , wound contraction, newly found granulation tissue and regeneration of hair follicles. The results concluded that Aloe Vera Gel improved the healing process of the wound when compared with 1% Sulpha diazide cream.

Cho.et. al.,(2004), conducted a study to assess the effectiveness of Aloe Vera therapy on wound healing among 60 Diabetes Mellitus Subjects. Subjects were selected by Purposive sampling technique. The wound was assessed for 7 days the mean SD of Subjects in Aloe Vera therapy was evaluated on day 1, 4, 7 shows that the mean wound assessment score in Aloe Vera therapy was on day 1(32.6). day 4(23.8) ,day 7(7) is less than wound assessment score in control group on day 1(32), day 2(29.8), day3(27.5) . This shows that Aloe vera was effective on wound healing among Diabetes Subjects.

Clark (1997) said that the prevention of pressure sores by frequent repositioning of Subject is a widely accepted practice. Pressure sores are a risk to any body who is confined to bed, as well as causing discomfort. Pressure sore can threaten a person's life. Preventing pressure sores is much easier than curing them. The wool contains lantin which lubricates the skin material and reduce skin friction because it does not wrinkle. This is substitute for regular turning and changing of position as **Fowler** et al. Revealed in their study.

PART IV: STUDIES RELATED TO WOUND DRESSING:

Allen Holloway (1999) said that use of anti septic solutions such as povidone iodine, Dakin's (Hypochlorite solution, hydrogen peroxide and acetic acid are to be avoided because all have been shown to be toxic to new cells and also he said that dressings such as hydrocolloids to prevent drying out can be changed infrequently as every 3 to 5 days allowing lesser nursing care requirements as well as improved comforts.

Shiraishi (1997) conducted a study on the treating pressure ulcer with povidone– iodine ointment is an excellent preparation in curing pressure ulcers, which has stability and antibacterial activity.

Stephen 1994 said that for conservative treatment in pressure ulcer, preference is a mixture of hydrogen peroxide and saline in equal parts. It is relatively bland, and the foaming action of the hydrogen peroxide provide mechanical flushing effect. Plain saline wet dressings and diluted acetic acid dressings have their advantages and the use ^{of} 1.5%. Darkins solutions give god results.

Evonne Fowler et al (1961) said in his article "Healing with hydrocolloid" – hydrocolloid dressings are occlusive wafers made of an adhesive mass of gum like materials such as Karaya, aloe vera oe pectin, covered with a flexible water resistant outer film. Wound fluid interacts naturally in the hydrocolloid material to form a Jelly like substance that keeps the wound surface moist and promote healing.

Griffith and Schultze (1961), said that surrounding skin may be protected by preparations such as a thick film of zinc oxide ointment or silicone cream to prevent macerations.

Garrettand (1959) "Caring for Elderly" in his book says that – always be sought before any cream or lotion is applied to the pressure sores, the factors will be assessed. Every effort needs to be made to help older people regain their ability to move about after illness or injury.

2.2 CONCEPTUAL FRAME WORK

A conceptual framework is a theoretical approach to study the problems that are scientifically based which emphasize selection, arrangement and classification of its concepts. Selecting a nursing conceptual framework helps the researcher to identify problem that are of significance to the discipline of nursing. Framework guiding a research study is not merely a review of the literature, but also a creative product of the researcher's appraisal of the literature.

MODIFIED WIEDENBACH'S THEORY OF HELPING ART CLINICAL NURSING (1964)

According to Wiedenbach the practice of nursing comprises a wide variety of services each directed towards the attainment of one of its five components. Realities refer to physical, physiologic, emotional and spiritual factors that come into play in a situation involving nursing actions. The five realities identified by Wiedenbach are agent, recipient, goal, means, and frame work.

Agent: The agent is the practicing nurse who has the personal attribute commitment and competence to provide nursing care. In this study agent is the nurse who provides Aloe Vera Gel Dressing for the pressure ulcer Subjects.

Recipient: The recipient is the one who receives the nurse's actions. In this study the recipients are the bedridden Subjects with pressure ulcer Grade – I or mild grade.

Goal: The goal is the nurse's desired outcome. In this study the goal is to improve the healing of pressure ulcers.

Means: The means are the activities and devices used by the nurse to achieve the goal. In this study Aloe Vera Gel Dressing is the means of improving healing of pressure ulcers.

Frame work: It refers to the facilities in which nursing is practiced. In this study the frameworks are the Medical, Surgical and Orthopedic wards.

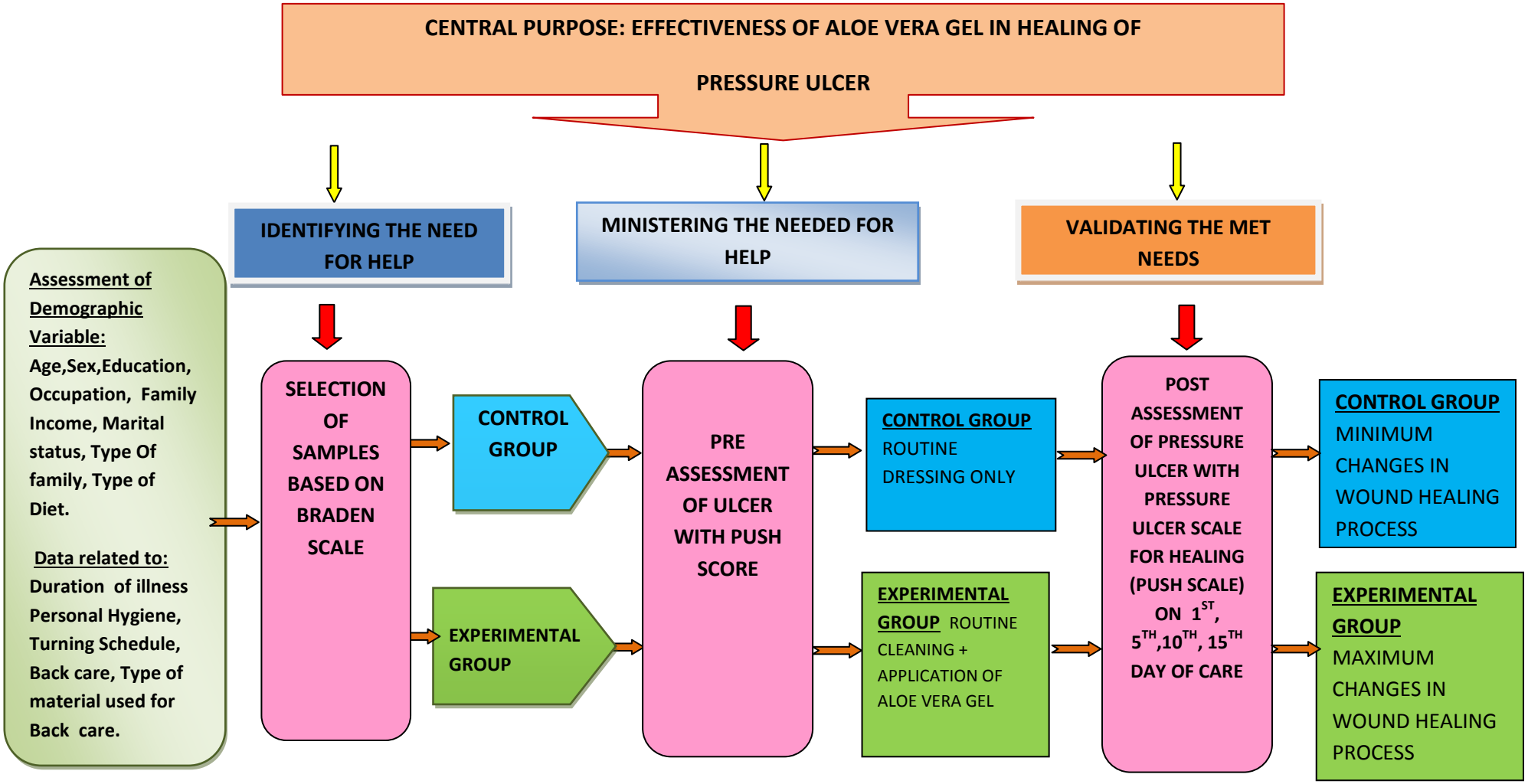


Fig .10. CONCEPTUAL FRAMEWORK BASED ON WEIDENBACH'S HELPING ART OF CLINICAL NURSING

CHAPTER III

RESEARCH METHODOLOGY

"There is nothing like looking, if you want to find something. You certainly usually find something, if you look, but it is not always quite the something you were after".

-J.R.R. Tolkien

This chapter deals with the research methodology which was adopted for the study and includes the description of research approach, research design, setting population, sample size, sampling technique, criteria for sample selection, method of data collection procedure and plan for statistical data analysis.

3.1 RESEARCH APPROACH:

According to **Pilot and Hungers**, evaluative research is an applied form of research that involves finding out how will the programmes, practice, procedure or policy of working. In this study the quantitative research approach was used, the investigation aims at evaluating the study to assess the effectiveness of Aloe Vera Gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital. It also helps the researcher with the suggestion of possible conclusions to be drawn from the data.

3.2 RESEARCH DESIGN

The research design used for this study is Quasi experimental two group pre assessment and post assessment design.

GROUP	PRE ASSESSMENT	INTERVENTION	POST ASSESSMENT
Experimental Group	**01**	X	**02**
Control Group	**03**	**----**	**04**

01 – Pre wound assessment score in Experimental group

02 – Post wound assessment score in Experimental group

X – Aloe Vera Gel Application

03 - Pre wound assessment score in Control group

04 – Post wound assessment score in Control group

3:3 VARIABLES

The categories of variables discussed in this study were

Independent variable: Application of Aloe Vera Gel for pressure ulcers.

Dependent variable: Wound healing process of pressure ulcers

3.4 SETTING OF THE STUDY

The study was conducted in Medical wards, Surgical wards and Orthopedic wards at Rajiv Gandhi Government General Hospital, Chennai-3.

3.5 POPULATION

The target population of this study comprises of bed ridden subjects in medical wards, surgical wards and in orthopedic wards, at Rajiv

Gandhi Government General Hospital, Chennai-03, those who are having Grade - I or mild grade pressure ulcer with the score between 15 – 18 in Braden Pressure Ulcer Assessment Scale.

3.6 SAMPLE:

Subjects those who are all having mild grade or Grade – I pressure ulcer with the score of 15-18 in the Barbara Braden and Nancy Bergstrom Scale, admitted in Medical wards, Surgical wards and in Orthopedic wards at Rajiv Gandhi Government General Hospital and who fulfill the inclusion criteria.

3.7 SAMPLE SIZE

The sample size for this study was 60, each 30 from Experimental and Control group respectively.

3:8 SAMPLING TECHNIQUE

Non random convenient sampling technique was adopted in this study. Subjects were randomly assigned to Experimental and Control group.

3:9 CRITERIA FOR SELECTION OF SAMPLES

Inclusion criteria

- Age group above 30 years
- Subjects of both sex
- Bedridden subjects with pressure ulcer Grade - I or mild grade pressure ulcers.

Exclusion criteria

- Subjects who are suffering from chronic illnesses like diabetes mellitus, tuberculosis, anemia, vascular diseases, septicemia and mental diseases.

- Subjects who had been previously treated with other topical medicine or antibiotics.

3:10 DEVELOPMENT AND DESCRIPTION OF TOOL

Data collection tools are the procedures or instruments used by the researcher to observe or measure key variables in the research problem.

DESCRIPTION OF THE TOOL

The instrument has been designed exclusively for this study. It consists of an interview schedule which is to be filled in by the investigator by interviewing the subjects directly and also by observing the pressure ulcer on various aspects. It has four sections.

Section 1 – Demographic variable (age, sex, marital status, occupation, religion, area of residence, education and dietary pattern)

Section 2 – Variable related to personal hygiene (Duration of confined to bed, measures taken to maintain personal hygiene, Turning Schedule followed, Type of material used for back care, Bed Linen Changing)

Section 3 – Barbara Braden and Nancy Bergstrom Scale for predicting pressure ulcer risk.

Section 4 - PUSH scale (Pressure Ulcer Scale for Healing) to assess the wound healing assessment checklist.

BARBARA BRADEN AND NANCY BERGSTROM SCALE FOR PREDICTING PRESSURE ULCER RISK

Scoring with the Braden Scale:

RISK FACTORS ARE:

1. Sensory perception
2. Moisture
3. Activity
4. Mobility
5. Nutrition
6. Friction and Shear

RISK PATTERN	TOTAL SCORE
Very High Risk	**Score less than 9**
High Risk:	**Score 10-12**
Moderate Risk:	**Score 13-14**
Mild Risk:	**Score 15-18**
No Risk:	**Score 19-23**

WOUND HEALING ASSESSMENT CHECKLIST: PRESSURE ULCER SCALE FOR HEALING (PUSH)

Characteristic of Wound	Size of the Wound (in $cm^{2)}$	Score
LENGTH X WIDTH		
	• 0	0
	• <0.3	1
	• 0.3-0.6	2
	• 0.7-1.0	3
	• 1.1-2.0	4
	• 2.1-3.0	5
	• 3.1-4.0	6
	• 4.1-8.0	7
	• 8.1-12.0	8
	• 12.1-24.0	9
	• >24.0	10
EXUDATE AMOUNT	None	0
	Light	1
	Moderate	2
	Heavy	3
TISSUE TYPE	Closed	0
	Epithelial Tissue	1
	Granulation Tissue	2
	Slough	3
	Necrotic4 Tissue	4

3:11 ETHICAL CONSIDERATION :

This study was conducted after the approval obtained from the Ethical Committee Madras Medical College, Chennai-3. Permission was obtained from the Professor and HOD of the Institute of Internal Medicine, HOD of the General Surgery Department, and HOD of the Orthopedics Department. All subjects were carefully informed about the purpose of the study Ensured confidentiality of the study result. The freedom was given to the client to leave the study at his / her will without assigning any reason. No routine care was altered or withheld. Thus the investigator followed the Ethical guidelines which were issued by the research committee. Written consent was obtained from all subjects.

3.12 CONTENT VALIDITY

The content validity of the tool was established on the basis of opinion from two experts, one from the Head of the Institute of Internal Medicine and the other from the Nursing expert. The experts validated the relevance, sequence, adequacy of language of the tool

.

3.13 PILOT STUDY

Pilot Study

The pilot study helped the investigator to assess the effectiveness of the data collection plan, identify the inadequacies of the plan and make due modifications as required, find out the feasibility of conducting the study and to determine the methods of statistical analysis.

The Formal permission was obtained from the concern higher authorities at Rajiv Gandhi Government General Hospital, Chennai – 03. The investigator carried out the pilot study with one-tenth of the total sample i.e.,6 Samples those who fulfilled the inclusion criteria were chosen by using Non

random, convenient sampling technique. Among 6 samples, 3 samples were in Experimental group and 3 samples were in Control group. Informed consent was obtained from the subjects and care givers of the samples and data was collected with the help of Barbara Braden and Nancy Bergstrom assessment scale within the score range of 15-18. . Routine hospital dressing was followed for both Experimental and Control groups daily once. Aloe Vera Gel was applied over the wound for experimental group only. Pre and post assessment was done to assess the wound healing process by using Pressure Ulcer Scale for Healing (PUSH). The data was analyzed and the result of the study revealed that, the correlation coefficient r – value is 0.84. The instrument was found reliable for proceeding with the main study.

3.14 RELIABILITY OF THE TOOL

Reliability denotes degree of consistency. After pilot study reliability of the tool was assessed by using inter rater method and its correlation coefficient r –value is 0.84. This correlation coefficient is high and it is good tool for assessing effectiveness of Aloe Vera Gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital.

3:15 DATA COLLECTION PROCEDURE

A formal written permission was obtained from the Head Of the Departments of Medical, Surgical and Orthopedics, Rajiv Gandhi Government General Hospital, Chennai – 03. By using Non random, convenient sampling technique three or four subjects were selected on every day. Subjects selected for Pilot study were excluded.

The subjects for the study were selected based upon the of Barbara Braden and Nancy Bergstrom wound assessment scale within the score of 15 18 or the mild degree pressure ulcer with Grade – I. The study purpose and method were explained to all subjects and informed written consent was obtained. Confidentiality was assured to all the subjects. The

information regarding demographic profile and personal hygiene related information were collected from 60 pressure ulcer subjects by interviewing them and observing health records. 30 subjects were included for both experimental and control group.

The pre assessment of the wound was done with the help of Pressure Ulcer Scale for Healing (PUSH) for all the subjects using the ruler and trace paper. Routine hospital wound dressing procedure was followed to both Experimental and Control group. Aloe Vera Gel was applied to the Experimental group only.

For the subjects' post assessment was done by Pressure Ulcer Scale for Healing , on the 1^{st} day, 5^{th} day, 10^{th} day and 15^{th} day for both groups by seeing the wound characteristics like wound size, exudates amount and tissue type.

The same procedure was followed for the rest of the subjects subsequently.

3.16 PLAN FOR DATA ANALYSIS

Data analysis was planned to include descriptive and inferential statistics.

Descriptive statistics

- Frequency and Percentage distribution of demographic profile and personal hygiene related information..
- Mean and standard deviations of pre and post assessment of wound healing scores.

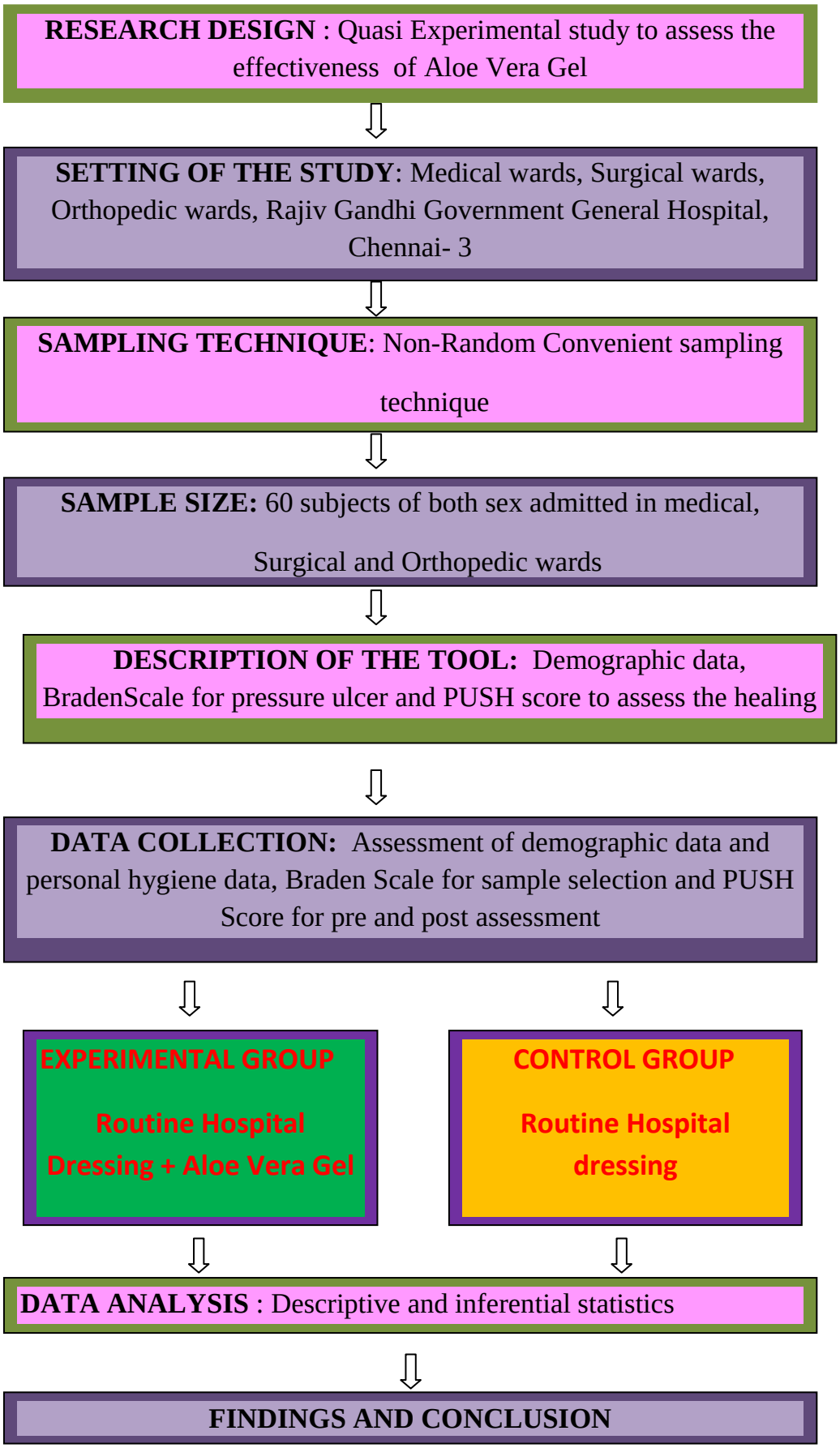
Inferential statistics

- Independent ‘t’ test to assess the effectiveness of Aloe Vera Gel on wound healing process in Experimental group.
- Chi square to associate between the selected demographic variables.

3.17 PROJECTED OUTCOME:

Projected outcome of the study is that the pressure ulcer subjects will have

- Improved healing status
- Reduction in amount of exudates
- Improved blood circulate



(Fig:11) SCHEMATIC REPRESENTATION OF THE RESEARCH DESIGN

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

All things are subject to interpretation. Whichever interpretation prevails at a given time is a function of power and not the truth".

Analysis is the process of organizing and synthesizing data in such a way that question can be answered and hypothesis tested.

This chapter deals with the analysis and interpretation of data to evaluate the effectiveness of Aloe vera gel in healing of pressure ulcers among subjects admitted at Rajiv Gandhi Government General Hospital, Chennai – 03.

The findings are presented under the following sections

Section 1:

Distribution of samples according to their selected demographic variables in Experimental and Control group.

Section 2:

Assessment of pre test level of pressure ulcer score in both Experimental and Control group.

Section 3:

Comparison of pressure ulcer score after intervention in Experimental and Control group.

Section 4:

Effectiveness of aloe vera gel in healing of pressure ulcers in Experimental and Control group.

Section 5:

Association of the level of pressure ulcer in Experimental and Control groups with selected socio-demographic variables.

Section-A

Table 1: DEMOGRAPHIC PROFILE

Demographic variables		Group			
		Experiment		Control	
		N	%	n	%
Age	30 -40 years	9	30.0%	7	23.3%
	40 -50 years	8	26.7%	10	33.3%
	50 -60 years	8	26.7%	5	16.7%
	> 60 years	5	16.7%	8	26.7%
Sex	Male	22	73.3%	19	63.3%
	Female	8	26.7%	11	36.7%
Marital status	Married	20	66.7%	16	53.3%
	Un Married	3	10.0%	3	10.0%
	Divorced	3	10.0%	6	20.0%
	Widow	4	13.3%	5	16.7%
Religion	Hindu	20	66.7%	21	70.0%
	Muslim	2	6.7%	2	6.7%
	Christian	8	26.7%	7	23.3%
Type of family	Nuclear family	13	43.3%	13	43.3%
	Joint family	17	56.7%	17	56.7%
Educational status	Illiterate	11	36.7%	9	30.0%
	Elementary	9	30.0%	13	43.3%
	Higher secondary	7	23.3%	6	20.0%
	Graduate	3	10.0%	2	6.7%
Occupation	Government	2	6.7%	2	6.7%
	Private	17	56.7%	16	53.3%
	Pensioner	3	10.0%	3	10.0%
	Unemployed	8	26.7%	9	30.0%
Income	< Rs.1000	2	6.7%	4	13.3%
	Rs.1000 -2000	11	36.7%	11	36.7%
	Rs.2000 -5000	15	50.0%	14	46.7%
	>Rs.5000	2	6.7%	1	3.3%
Area of residence	Rural	14	46.7%	18	60.0%
	Urban	16	53.3%	12	40.0%
Dietary pattern	Fat rich diet	5	16.7%	7	23.3%
	Carbohydrate diet	9	30.0%	8	26.7%
	Protein rich diet	16	53.3%	15	50.0%

Table 1 Shows the frequency and percentage distribution of demographic variables of subjects in Experimental group and Control group.

Regarding the age, majority of the subjects 9(30%) were between 30-40 years in Experimental group and majority of subjects 10(33.3%) were between 40-50years in Control group.

Considering the sex majority of subjects 22(73.7%) were males in Experimental group and majority of subjects19(63.3%) were males in Control group.

As for the marital status, majority of subjects 20(66.7%) were married in Experimental group and most of the subjects 16(53.3%) were married in Control group.

In considering the religion, majority of subjects 20(66.7%) were Hindus in Experimental group and majority of subjects 21(70%) were Hindus in Control group.

Regarding the type of family majority of subjects 17(56.7%) belonged to Joint family in Experimental group and most of the subjects 17(56.7%) belonged to Joint family in Control group.

As for the Educational status, majority of subjects 11(36.7%) were illiterates in Experimental group and most of the subjects 13(43.3%) had completed elementary education in Control group.

Considering the occupation, majority of subjects 17(56.7%) are private employees in Experimental group and most of the subjects 16(53.3%) are private employees in Control group.

Regarding the marital status, majority of subjects 20(66.7%) were married in Experimental group and most of the subjects 16(53.3%) were married in Control group.

As for the income, majority of subjects 15(50%) get a monthly income of Rs.2000-5000 in Experimental group and most of the subjects 14(46.7%) get a monthly income of Rs.2000-5000 in Control group.

Considering the area of residence, majority of subjects 16(53.3%) belonged to Urban area in Experimental group whereas most of the subjects 18(60%) belonged to Rural area in Control group.

Regarding the dietary pattern, majority of subjects 16(53.3%) used to have protein rich type of diets in Experimental group and most of the subjects 15(50%) used to have protein rich type of diets in Control group.

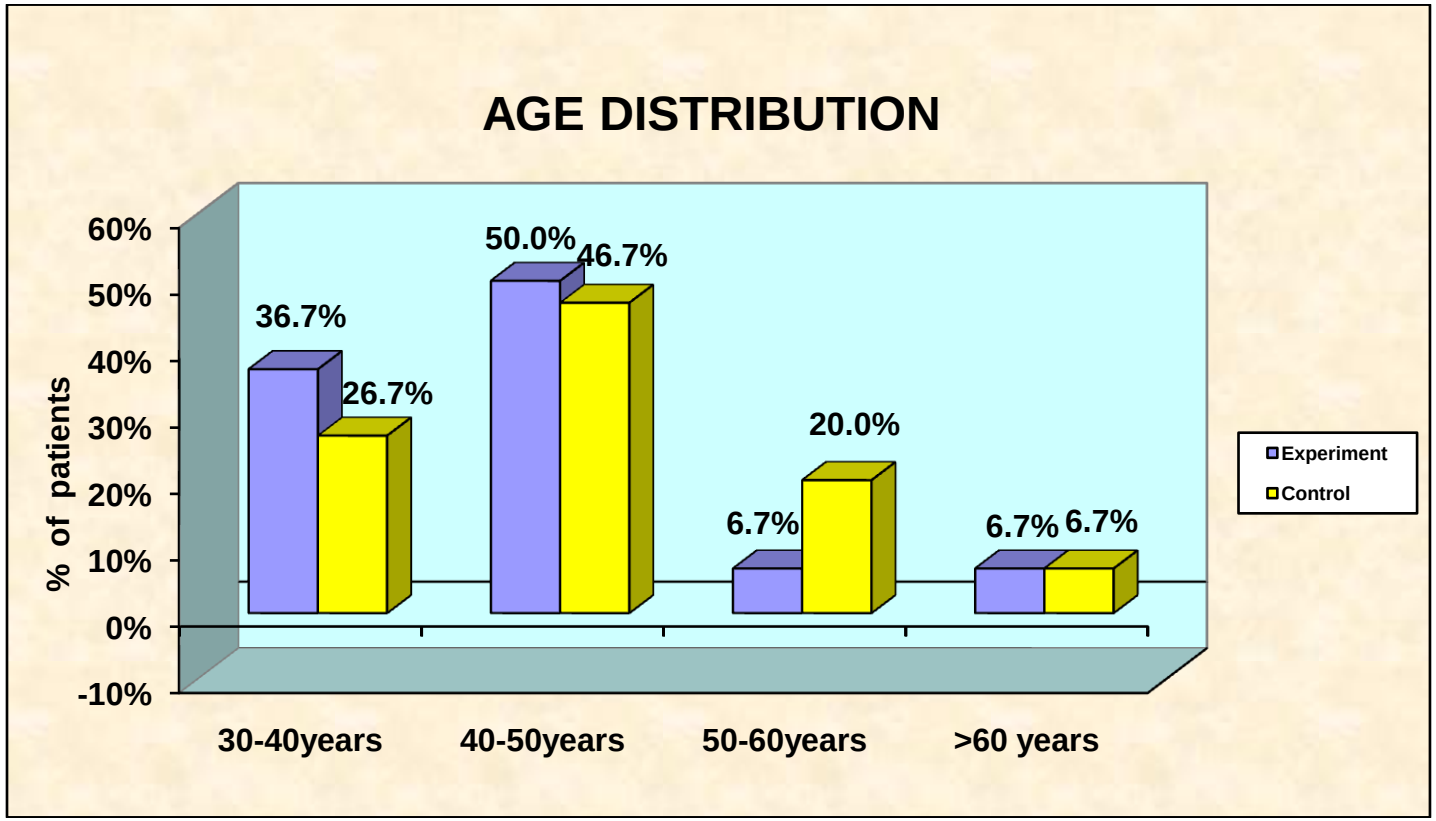


Figure 12: Shows distribution of samples according to age in Experimental group and Control group

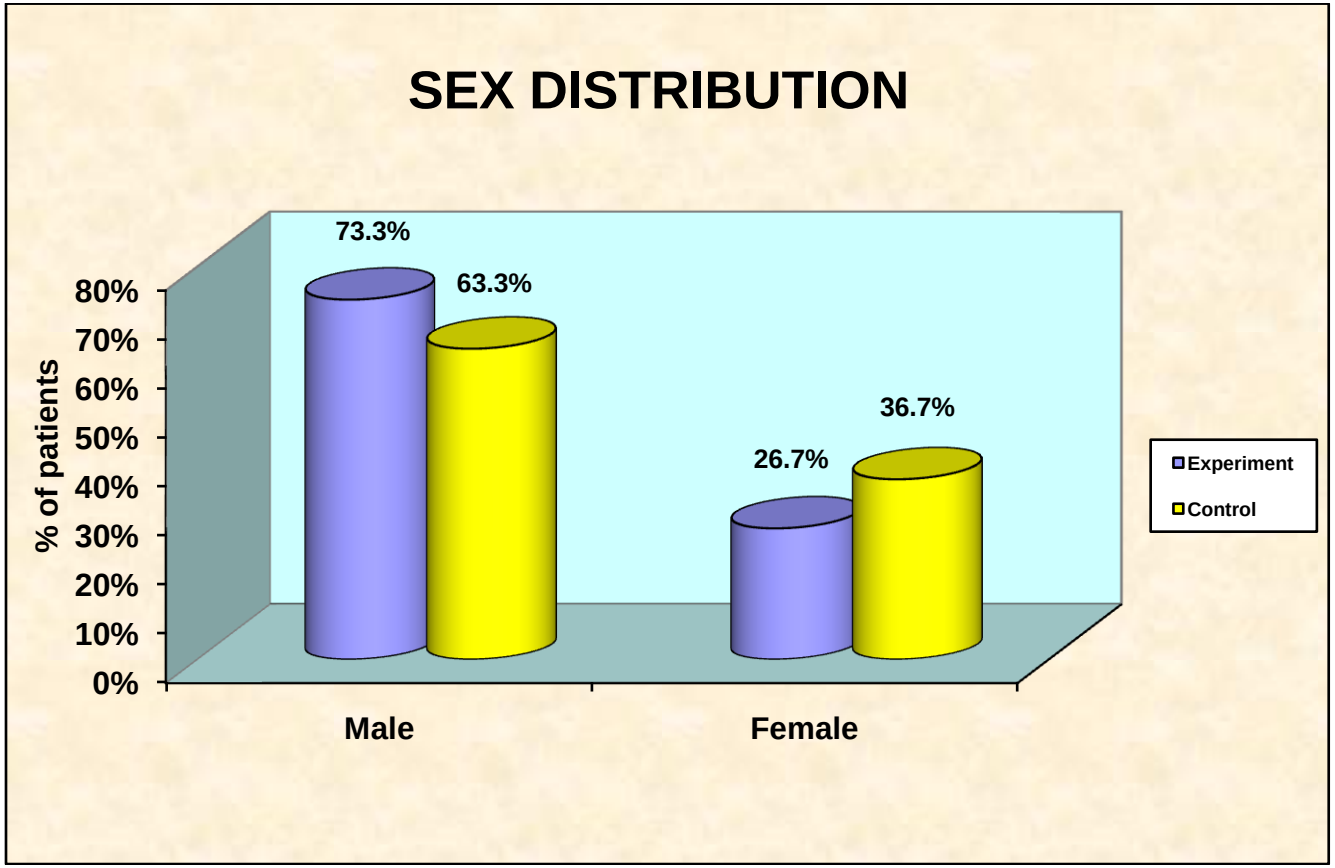


Figure 13: Shows distribution of samples according to sex in Experimental group and Control group.

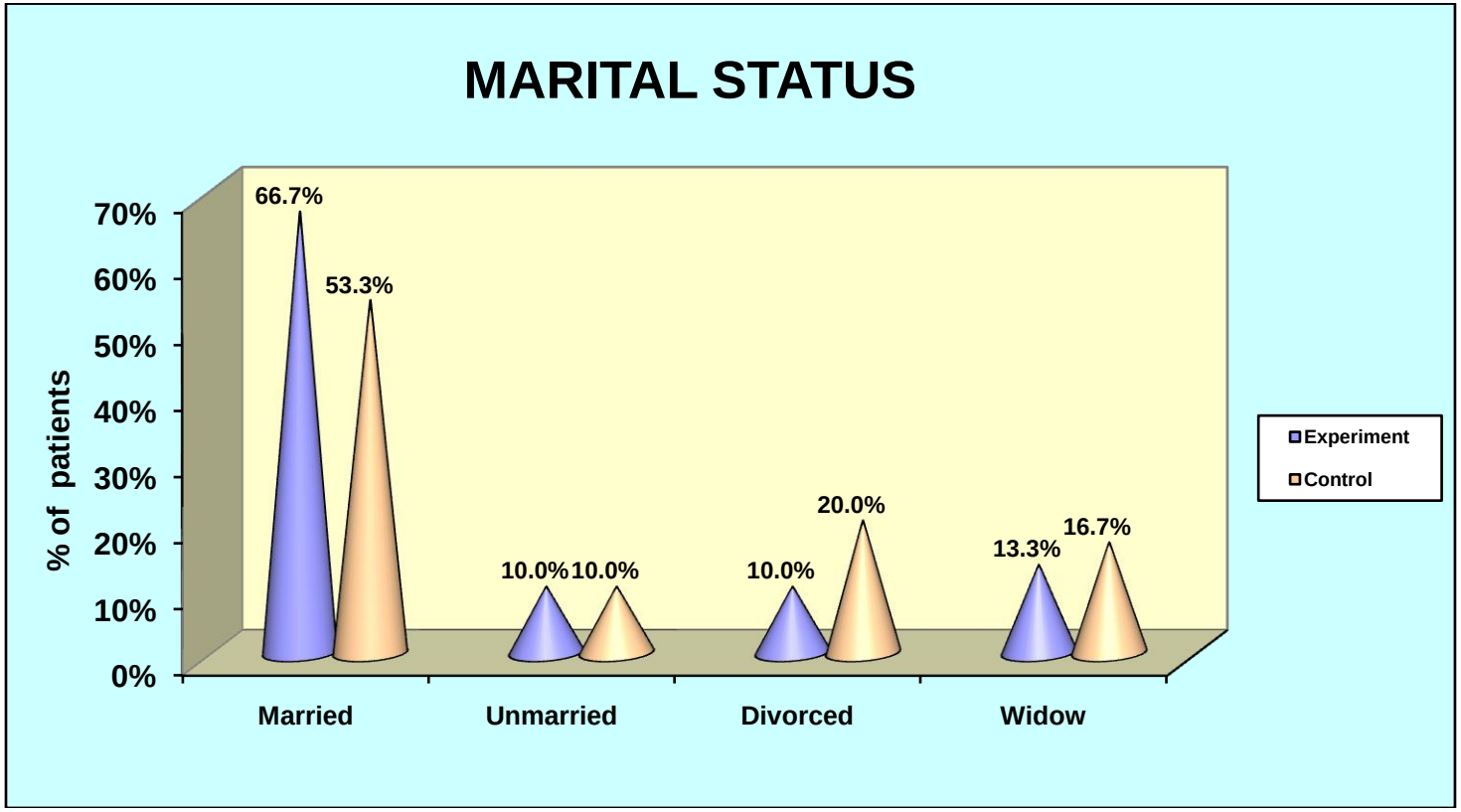


Figure 14: Shows distribution of samples according to marital status in Experimental and Control group.

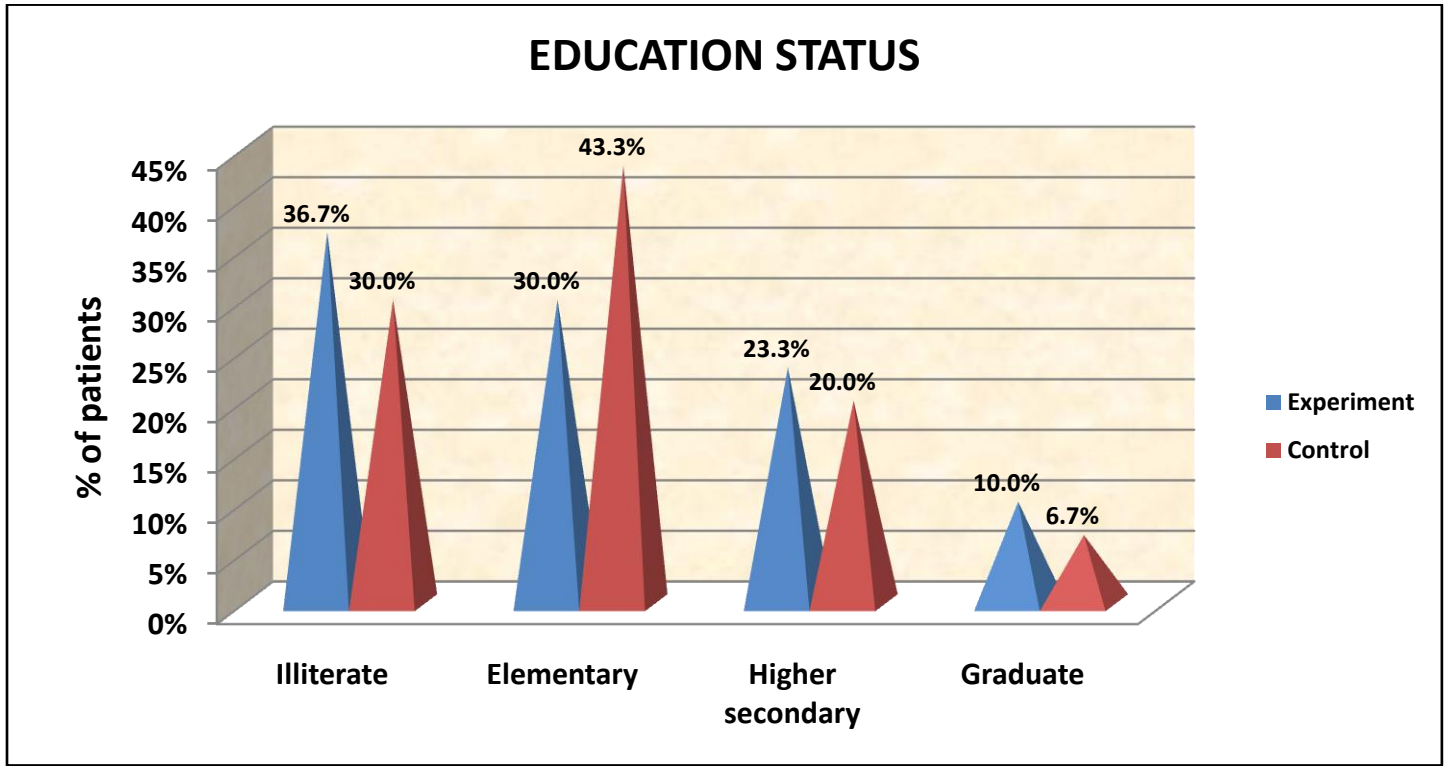


Figure15: Shows distribution of samples according to education in Experimental and Control group

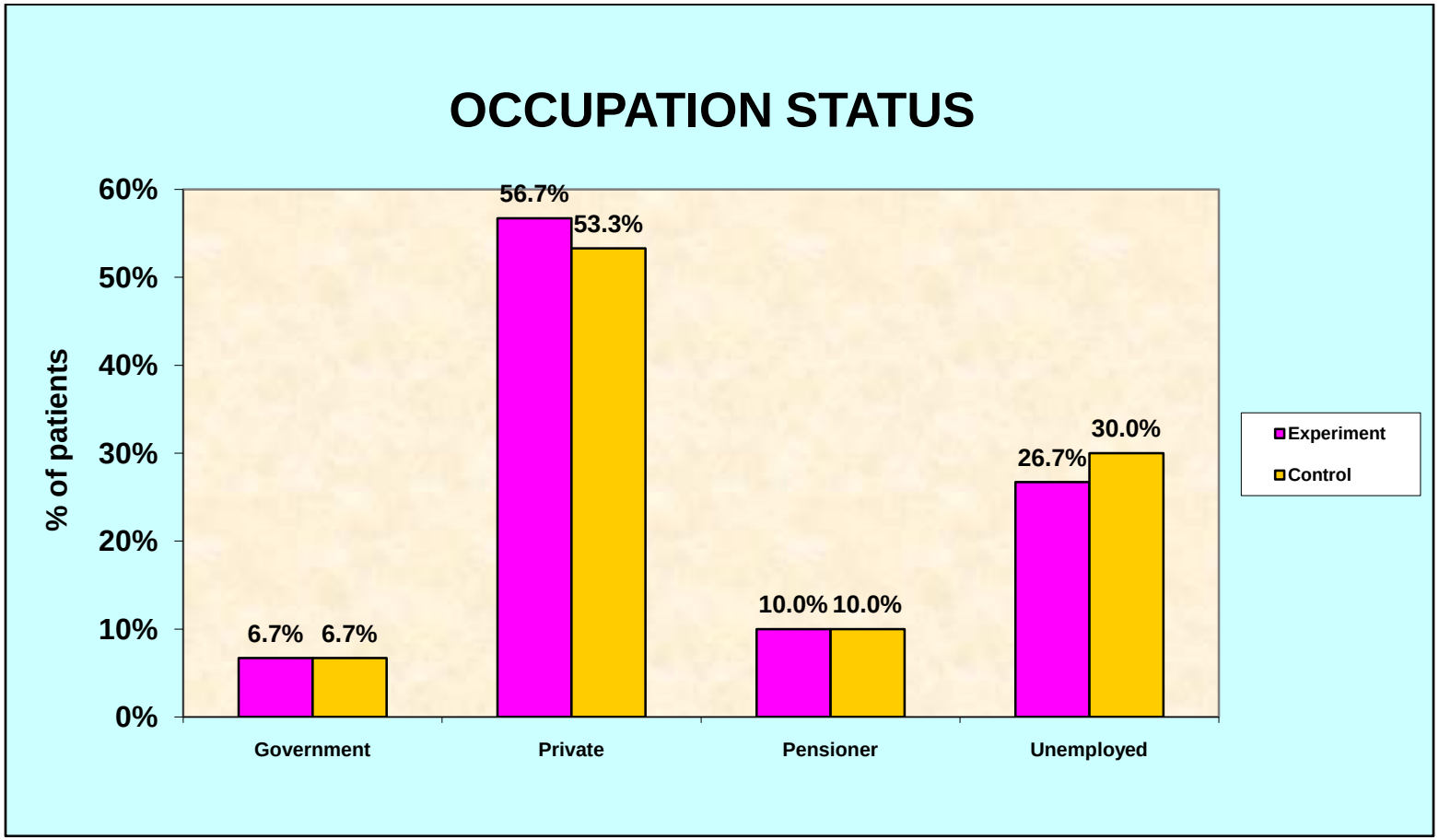


Figure 16: Shows distribution of samples according to occupation in Experimental and Control group

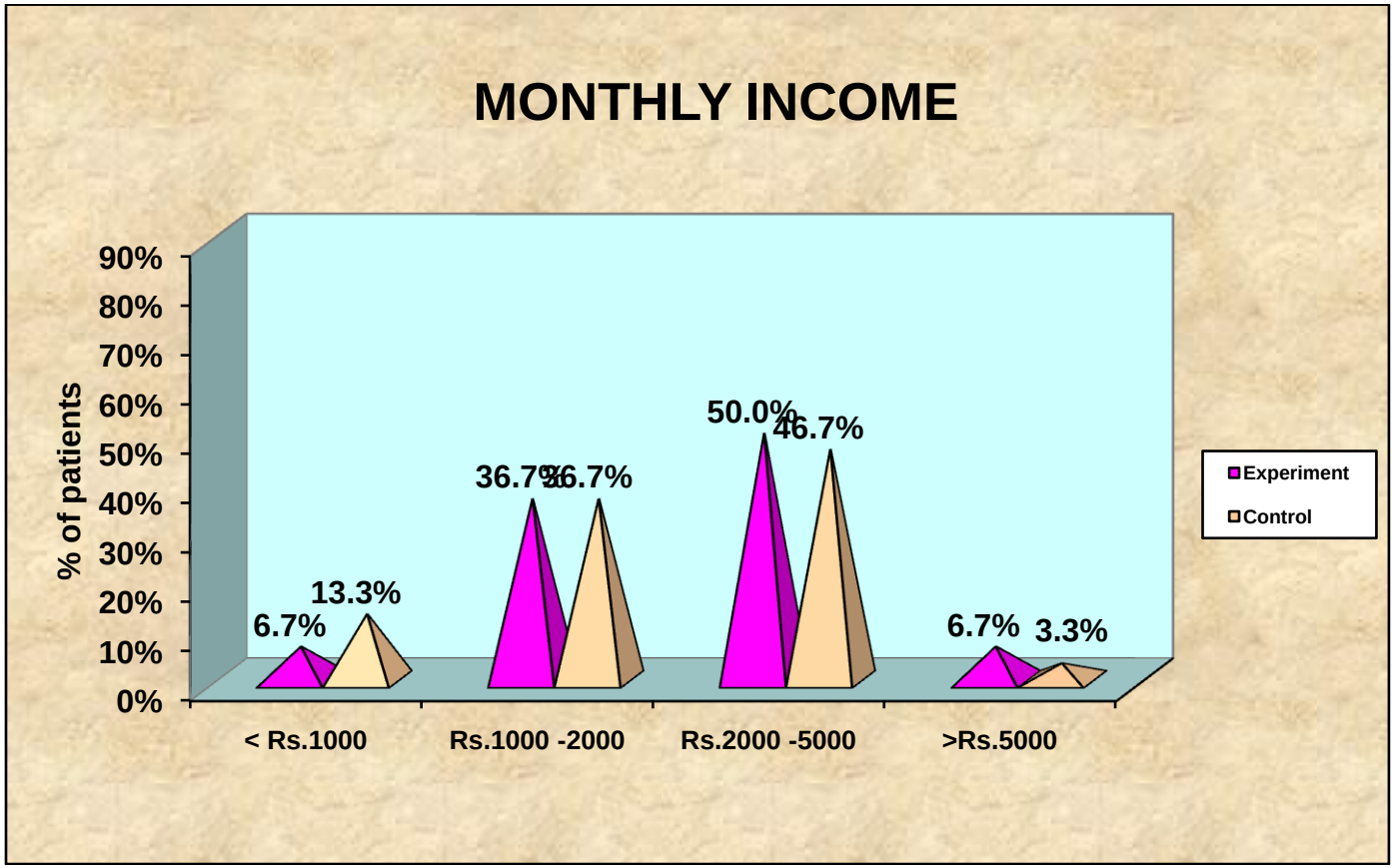


Figure 17: Shows distribution of Demographic variables according to monthly income in Experimental and Control group.

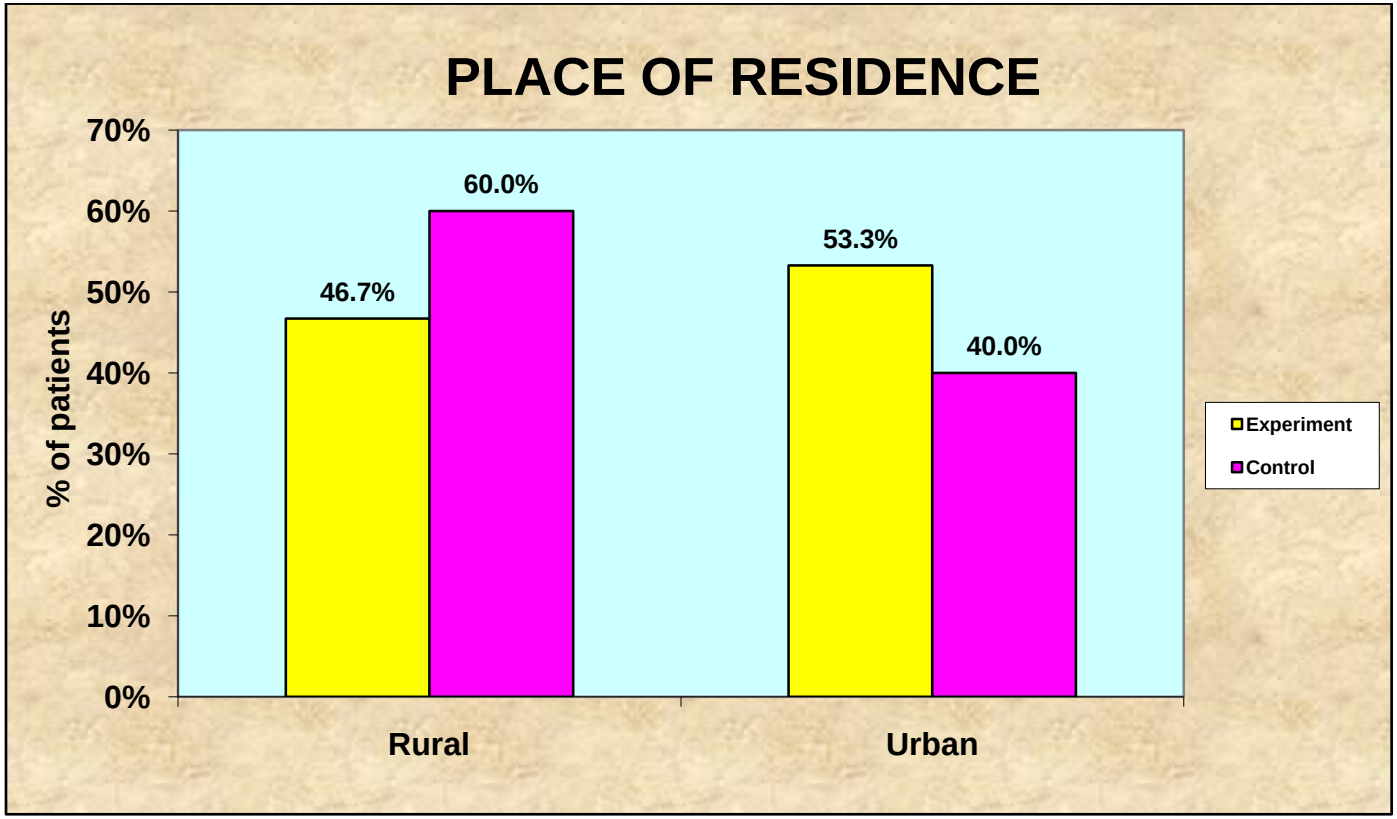


Figure 18: Shows distribution of area of residence according to Experimental and Control group.

Table 2: PERSONAL HYGIENE PROFILE

Personal hygiene		Group			
		Experiment		Control	
		n	%	n	%
Duration of confined to bed	< 1 month	16	53.3%	12	40.0%
	2 -5 month	10	33.3%	15	50.0%
	6 -12 month	4	13.3%	3	10.0%
Measures taken to maintain personal hygiene	Sponging	12	40.0%	7	23.3%
	Nail & Hair grooming	5	16.7%	6	20.0%
	Back care	6	20.0%	10	33.3%
	All of above	7	23.3%	7	23.3%
Turning Schedule followed	Every 2 hrs	3	10.0%	4	13.3%
	Every 4 hrs	4	13.3%	6	20.0%
	Every 6 hrs	15	50.0%	12	40.0%
	None	8	26.7%	8	26.7%
Type of material used for back care	Soap & water	2	6.7%	3	10.0%
	Plain water	18	60.0%	14	46.7%
	Talcum powder	10	33.3%	13	43.3%
Bed Linen Changing	Daily	11	36.7%	13	43.3%
	Once a week	12	40.0%	15	50.0%
	Twice a week	7	23.3%	2	6.7%

Table 2 Shows the personal hygiene information of subjects those who are participated in this study.

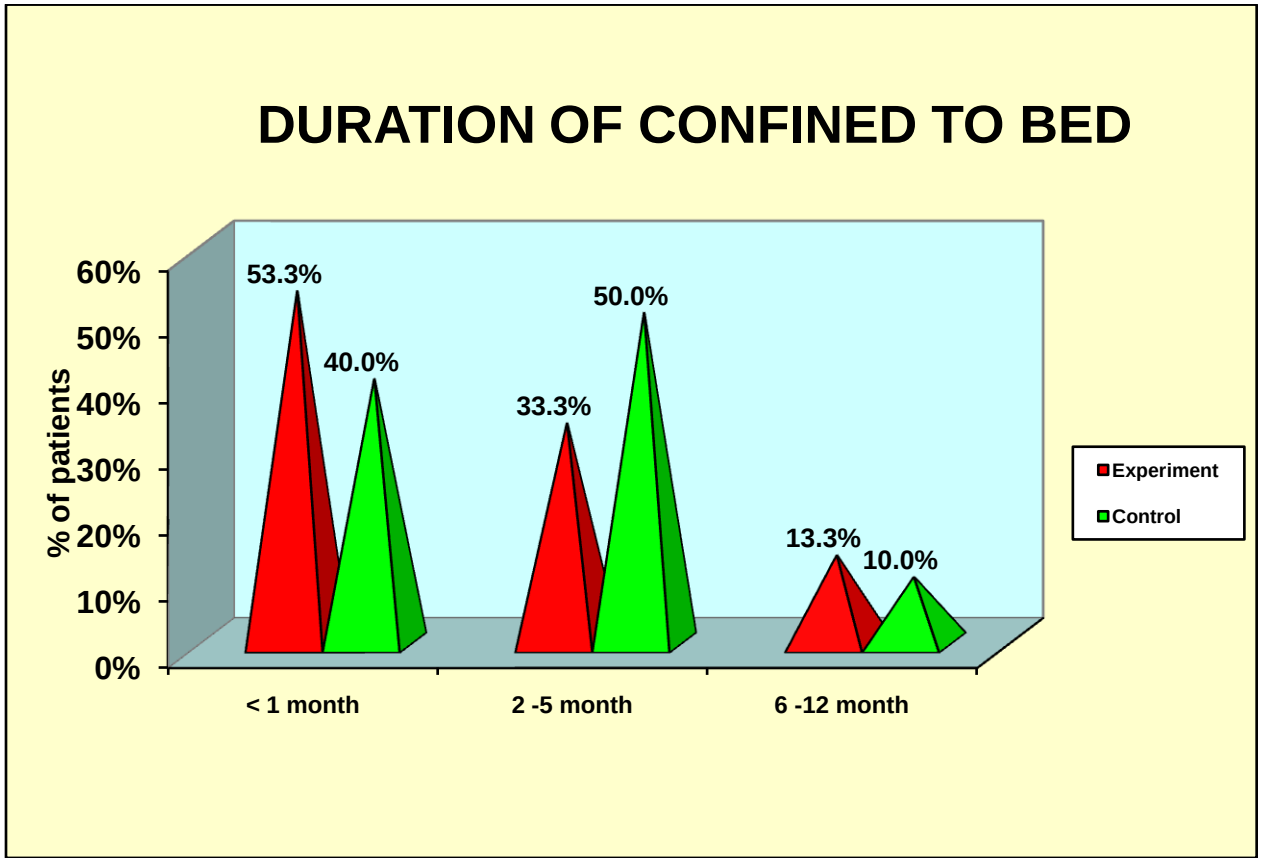


Figure 19: Shows distribution of samples according to duration confined to bed in Experimental and Control group

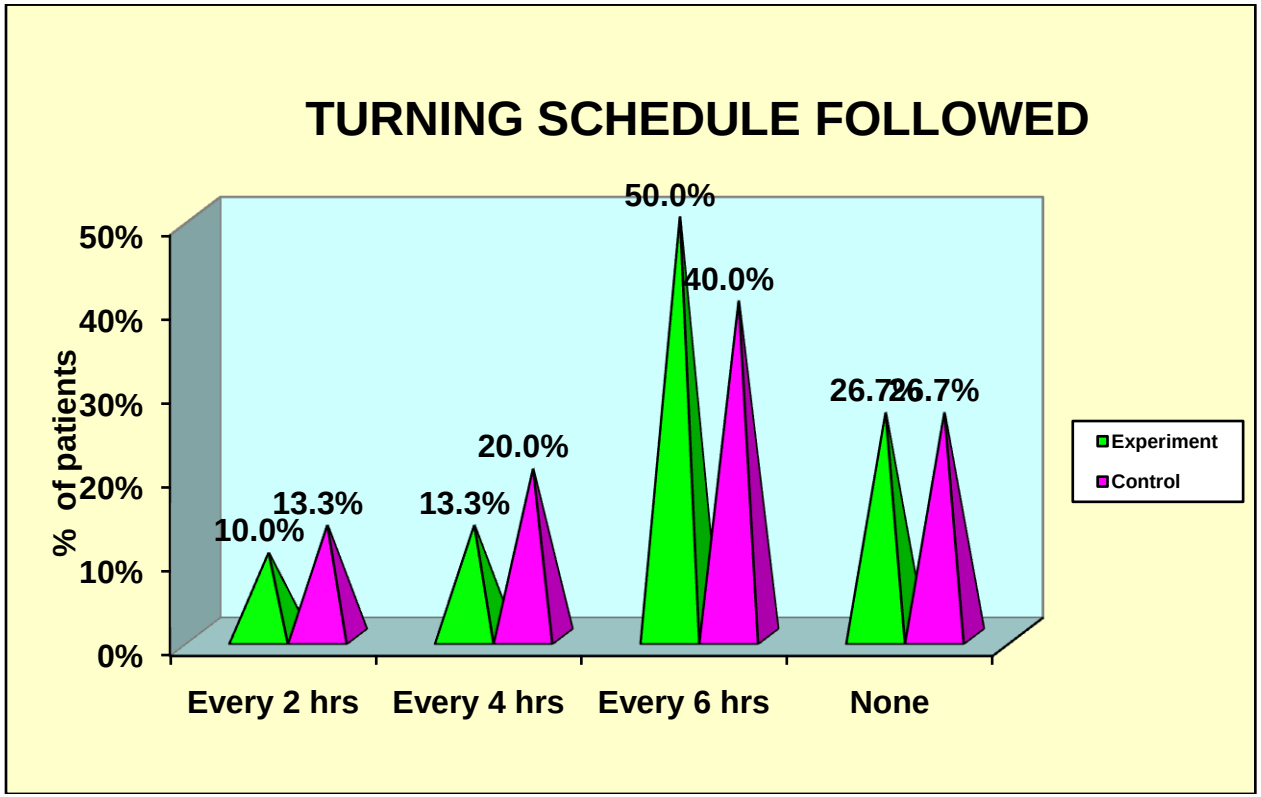


Figure 20:Shows distribution of samples according to turning schedule followed in Experimental and Control group

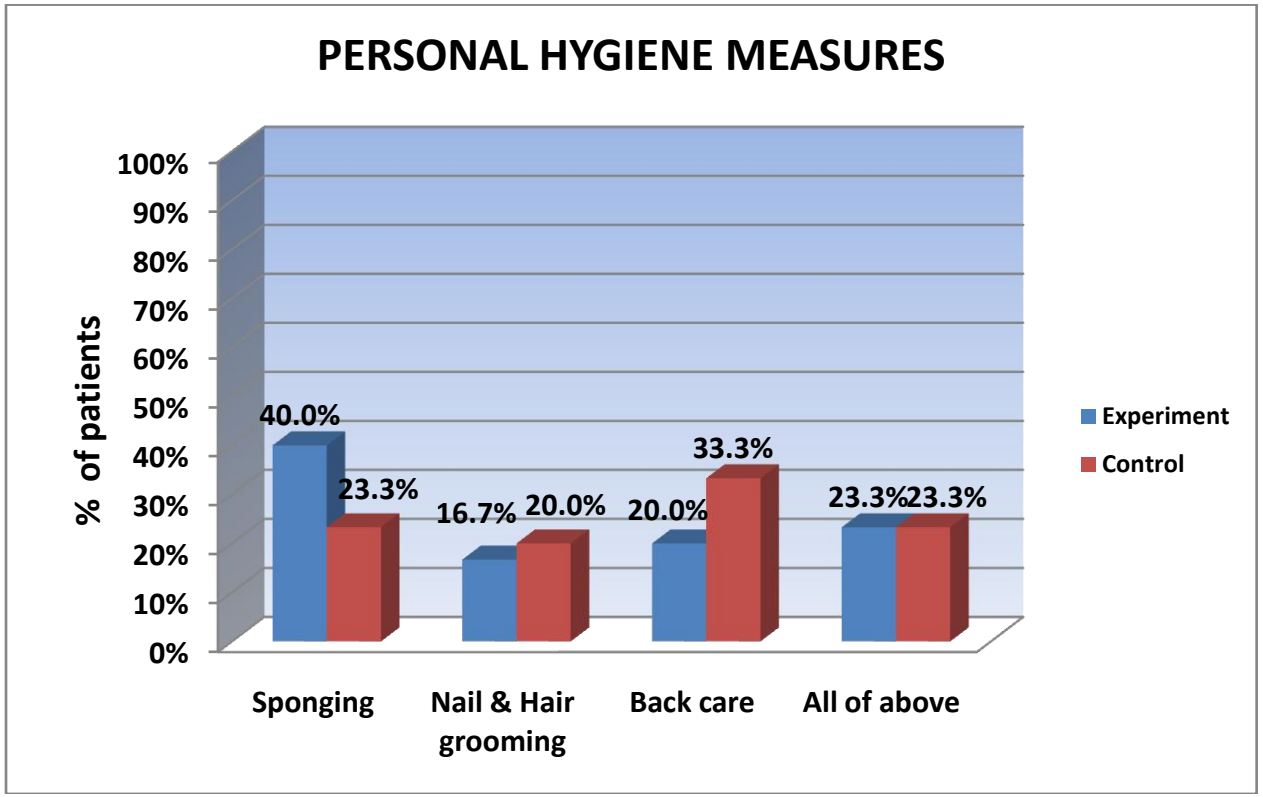


Figure21: Shows distribution of samples according to Personal hygiene measures in Experimental and Control group

SECTION-II

Table 3: ASSESSMENT OF POST ASSESSMENT PRESSURE ULCER SCORE

Wound Characteristics		Experiment		Control		Chi square test
		n	%	n	%	
Size of wound(cm)	0					$\chi 2=2.38$ p=0.66
	<0.3					
	0.3 -0.6					
	0.7 – 1.0	2	6.7%			
	1.1 -2.0	6	20.0%	5	16.7%	
	2.1 – 3.0	9	30.0%	10	33.3%	
	3.1 - 4.0	11	36.7%	12	40.0%	
	4.1 – 8.0	2	6.7%	3	10.0%	
Exudate Amount	None					$\chi 2=2.00$p=0.36
	Light					
	Moderate	29	96.7%	29	96.7%	
	Heavy	1	3.3%	1	3.3%	
Tissue type	closed					$\chi 2=0.00$ p=1.00
	Epithelial tissue					
	Granulation tissue	30	100.0%	30	100.0%	
	Slough					
	Necrotic tissue					

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 3 Shows there is no statistically significant difference between experiment and control group of subjects. Statistical significance was computed using chi square test.

Table 4: ASSESSMENT OF PRE ASSESSMENT PRESSURE ULCER SCORE (Experimental)

		Day1		Day5		Day10		Day15		Chi square test
		n	%	n	%	n	%	n	%	
Size of wound(cm)	0							2	6.7%	$\chi 2$=157.56 p=0.001***
	<0.3					2	6.7%	20	66.7%	
	0.3 -0.6			2	6.7%	14	46.7%	8	26.7%	
	0.7 – 1.0	2	6.7%	6	20.0%	8	26.7%			
	1.2 -2.0	6	20.0%	12	40.0%	6	20.0%			
	2.1 – 3.0	9	30.0%	10	33.3%					
	3.1 - 4.0	11	36.7%							
	4.1 – 8.0	2	6.7%							
Exudate	None							16	53.3%	$\chi 2$=144.46 p=0.001***
	Light			3	10.0%	28	93.3%	14	46.7%	
	Moderate	29	96.7%	27	90.0%	2	6.7%			
	Heavy	1	3.3%							
Tissue type	closed							20	66.7%	$\chi 2$=150.06 p=0.001***
	Epithelial			8	26.7%	29	96.7%	10	33.3%	
	Granulation	30	100.0%	22	73.3%	1	3.3%			
	Slough									
	Necrotic									

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 4 Shows day by day there is a improvement in wound healing, this difference is statistically significant . Statistical significance was computed using chi square test.

Table 5: ASSESSMENT OF PRE ASSESSMENT PRESSURE ULCER SCORE(Control)

		Day1		Day5		Day10		Day15		Chi square test
		n	%	n	%	n	%	n	%	
Size of wound(cm)	0									$\chi 2$=107.50 p=0.001***
	<0.3							4	13.3 %	
	0.3 -0.6					10	33.3 %	13	43.3 %	
	0.7 – 1.0			6	20.0 %	12	40.0 %	9	30.0 %	
	1.3-2.0	5	16.7%	10	33.3 %	7	23.3 %	4	13.3 %	
	2.1 – 3.0	10	33.3%	12	40.0 %	1	3.3%			
	3.1 - 4.0	12	40.0%	2	6.7%					
	4.1 – 8.0	3	10.0%							
Exudate Amount	None							16	53.3 %	$\chi 2$=100.75 p=0.001***
	Light			9	30.0 %	19	63.3 %	14	46.7 %	
	Moderate	29	96.7%	21	70.0 %	11	36.7 %			
	Heavy	1	3.3%							
Tissue type	Closed							7	23.3 %	$\chi 2$=112.82 p=0.001***
	Epithelial			3	10.0 %	27	90.0 %	23	76.7 %	
	Granulation	30	100.0 %	27	90.0 %	3	10.0 %			
	Slough									
	Necrotic									

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 5: Shows day by day there is a improvement in wound healing, this difference is statistically significant . Statistical significance was computed using chi square test.

SECTION III

Table 6: COMPARISON OF PRESSURE ULCER SCALE FOR HEALING

		Group				Student independent t-test
		Experiment		Control		
		Mean	SD	Mean	SD	
Day1	size	5.17	1.05	5.43	.90	t=1.05 p=0.29
	exudate	2.03	.18	2.10	.55	t=0.63 p=0.53
	tissue	2.00	.00	2.00	.00	t=0.00 p=1.00
	Total	9.20	1.10	9.50	.94	t=1.14p=0.26
Day5	size	4.00	.91	4.33	.88	t=1.43 p=0.15
	exudate	1.90	.31	2.07	.58	t=1.38 p=0.17
	tissue	1.73	.45	1.90	.31	t=1.68 p=0.10
	Total	7.63	1.30	8.20	.92	t=2.05 p=0.04*
Day10	size	2.60	.89	3.14	.85	t=1.99 p=0.05*
	exudate	1.07	.25	1.37	.49	t=2.97 p=0.01**
	tissue	0.93	.18	1.12	.31	t=2.92 p=0.01**
	Total	4.50	.95	5.63	1.03	t=4.42 p=0.001*
Day15	size	0.90	.55	1.90	.90	t=5.19p=0.001***
	exudate	.47	.51	.90	.41	t=3.61p=0.001***
	tissue	.33	.48	.77	.43	t=3.68 p=0.001***
	Total	1.70	.83	3.57	1.16	t=6.80p=0.001***

Fig11

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Table 6 compares the PUSH wound healing process score between the experimental and control group. From 5th day onwards there is a significant difference between experiment and control group.

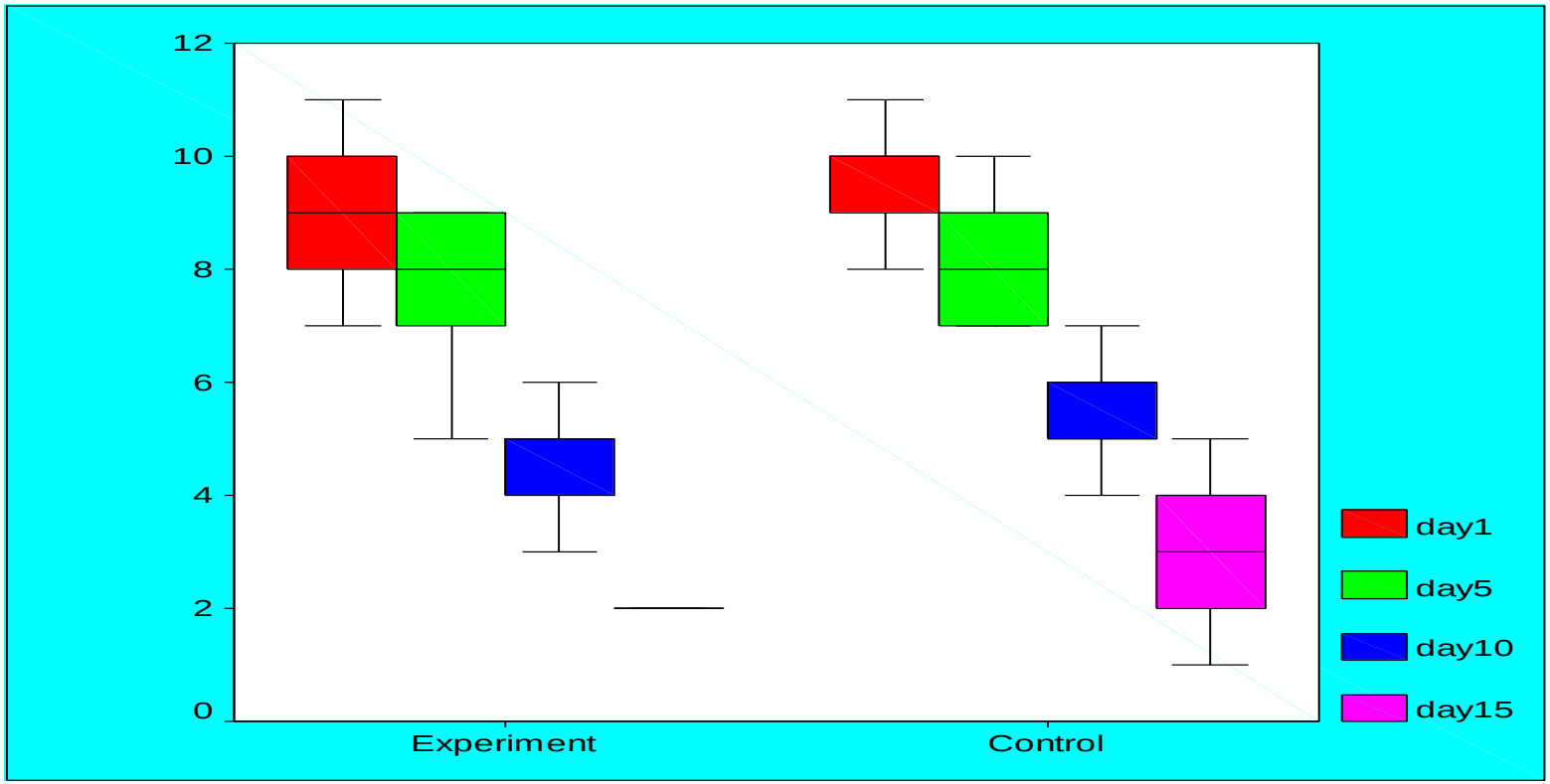


Fig 22:Box plot compares the pre assessment and post assessment with PUSH score

SECTION-IV

Table 7: Effectiveness of Aloe Vera Gel in healing of pressure ulcers

		Max score	Mean score	Mean difference with 95% Confidence Interval	Percentage difference with 95% Confidence Interval
Experiment	Pre assessment	17	9.20	7.50 (6.99-8.00)	44.1% (41.1%-47.0%)
	Post assessment	17	1.70		
Control	Pre assessment	17	9.50	5.93 (5.38—6.47)	34.8% (31.6%-38.1%)
	Post assessment	17	3.57		

Table no 7 assess the effectiveness of Aloe Vera Gel in healing of pressure ulcers among subjects admitted at Rajiv Gandhi Government General Hospital.

On an average, experiment subjects are having 44.1% of healing score whereas in control group are having 34.8% healing score. Differences between pre assessment and post assessment score was analysed using proportion with 95% CI and mean difference with 95% CI. This difference shows the effectiveness of Aloe Vera Gel in healing of pressure ulcers

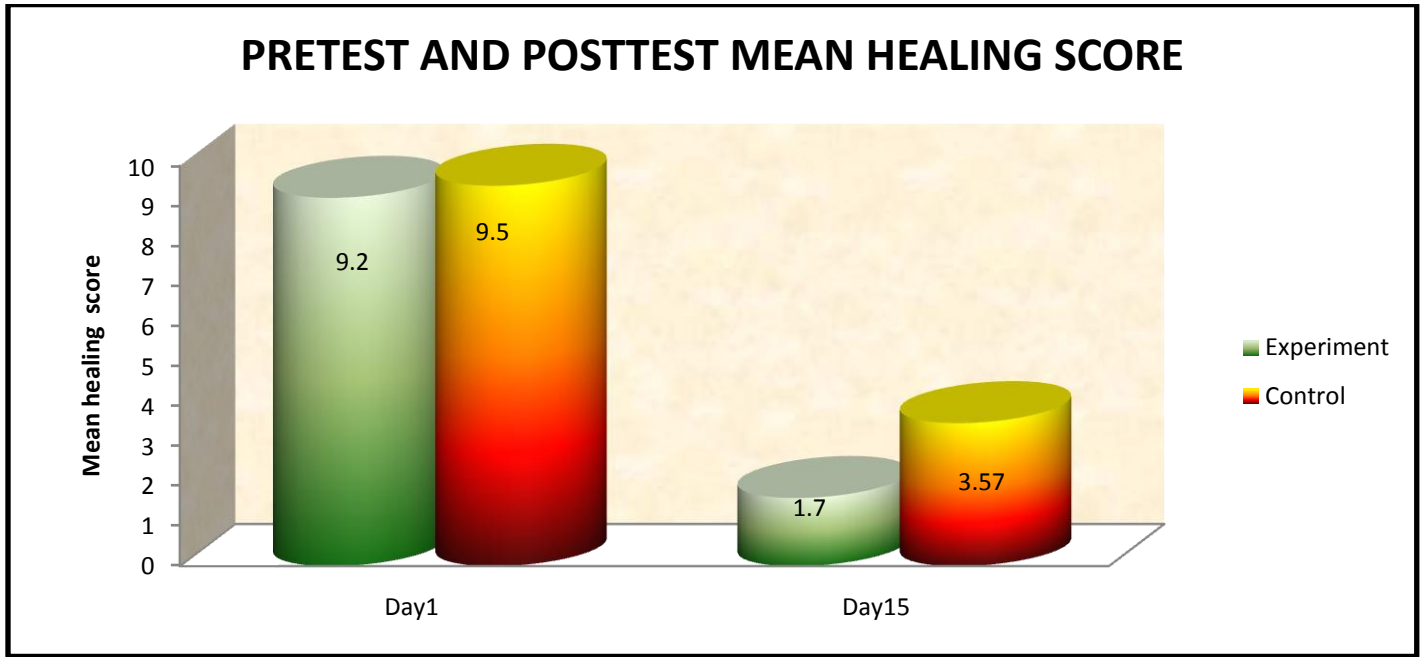


Figure 23: Shows values of pre-assessment and post assessment mean healing score between Experimental and Control group.

SECTION-V

Table8: Association between Level of Healing score and subjects' demographic variables(Experiment)

Demographic variables		Level of reduction of PUSH score				Total	Chi square test
		Below average(<7.5)		Above average(>7.5)			
		n	%	n	%		
Age	30 -40 years	1	11.1%	8	88.9%	9	
	40 -50 years	4	50.0%	4	50.0%	8	$\chi 2=10.94$
	50 -60 years	5	62.5%	3	37.5%	8	p=0.01**
	> 60 years	5	100.0%	0	0.0%	5	
Sex	Male	8	36.3%	14	63.7%	22	$\chi 2=6.14$
	Female	7	87.5%	1	12.5%	8	p=0.01**
Marital status	Married	1	50.0%	10	50.0%	20	
	Unmarried	0	0.0%	3	100.0%	3	$\chi 2=6.00$
	Divorced	3	100.0%	0	0.0%	3	p=0.11
	Widow	2	50.0%	2	50.0%	4	
Religion	Hindu	9	45.0%	11	55.0%	20	
	Muslim	1	50.0%	1	50.0%	2	$\chi 2=0.70$ p=0.71
	Christian	5	62.5%	3	37.5%	8	
Type of family	Nuclear family	6	46.2%	7	53.8%	13	$\chi 2=0.13$
	Joint family	9	52.9%	8	47.1%	17	p=0.71
Educational status	Illiterate	6	54.5%	5	45.5%	11	
	Elementary	4	44.4%	5	55.6%	9	$\chi 2=0.67$
	Higher secondary	4	57.1%	3	42.9%	7	p=0.87
	Graduate	1	33.3%	2	66.7%	3	
Occupation	Government	0	0.0%	2	100.0%	2	
	Private	8	47.1%	9	52.9%	17	$\chi 2=2.89$
	Pensioner	2	66.7%	1	33.3%	3	p=0.41
	Unemployed	5	62.5%	3	37.5%	8	
Income	< Rs.1000	1	50.0%	1	50.0%	2	
	Rs.1000 -2000	7	63.6%	4	36.4%	11	$\chi 2=1.41$
	Rs.2000 -5000	6	40.0%	9	60.0%	15	p=0.70
	>Rs.5000	1	50.0%	1	50.0%	2	
Area of residence	Rural	8	57.1%	6	42.9%	14	$\chi 2=0.53$
	Urban	7	43.8%	9	56.3%	16	p=0.46
Dietary pattern	Fat rich diet	2	40.0%	3	60.0%	5	
	Carbohydrate rich diet						
	Protein rich diet	4	44.4%	5	55.6%	9	$\chi 2=0.56$ p=0.75
		9	56.3%	7	43.8%	16	

healing score : pre assessment score- post assessment score

Table no 8shows the association between level of healing score and their demographic variables. Younger (X^2=10.94 at P≤0.01**) and male subjects (χ2=6.14 P≤0.01**) gained more healing .Statistical significance was calculated using chi square test.

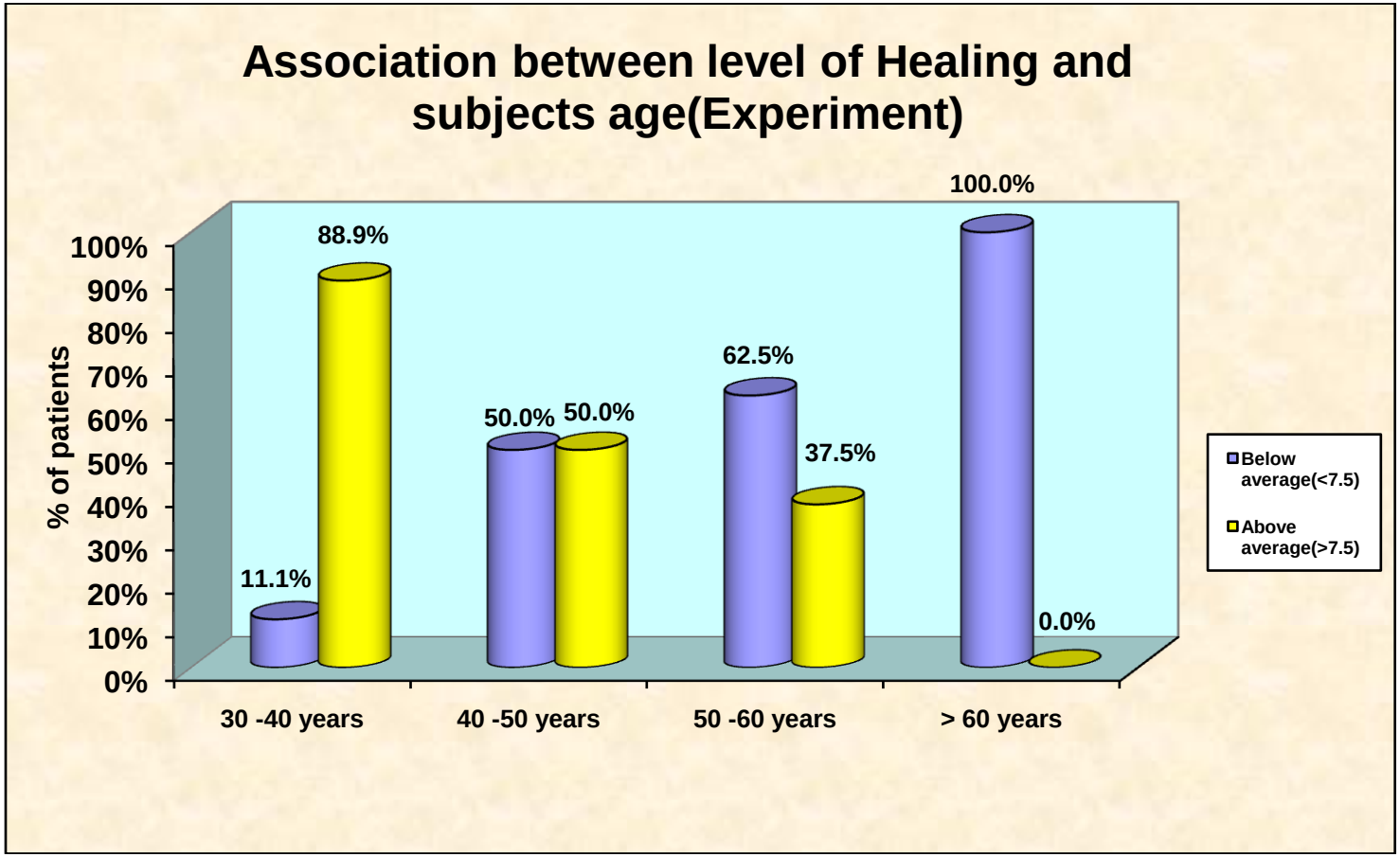


Figure 24: Shows association between level of healing and subject's age in Experimental group

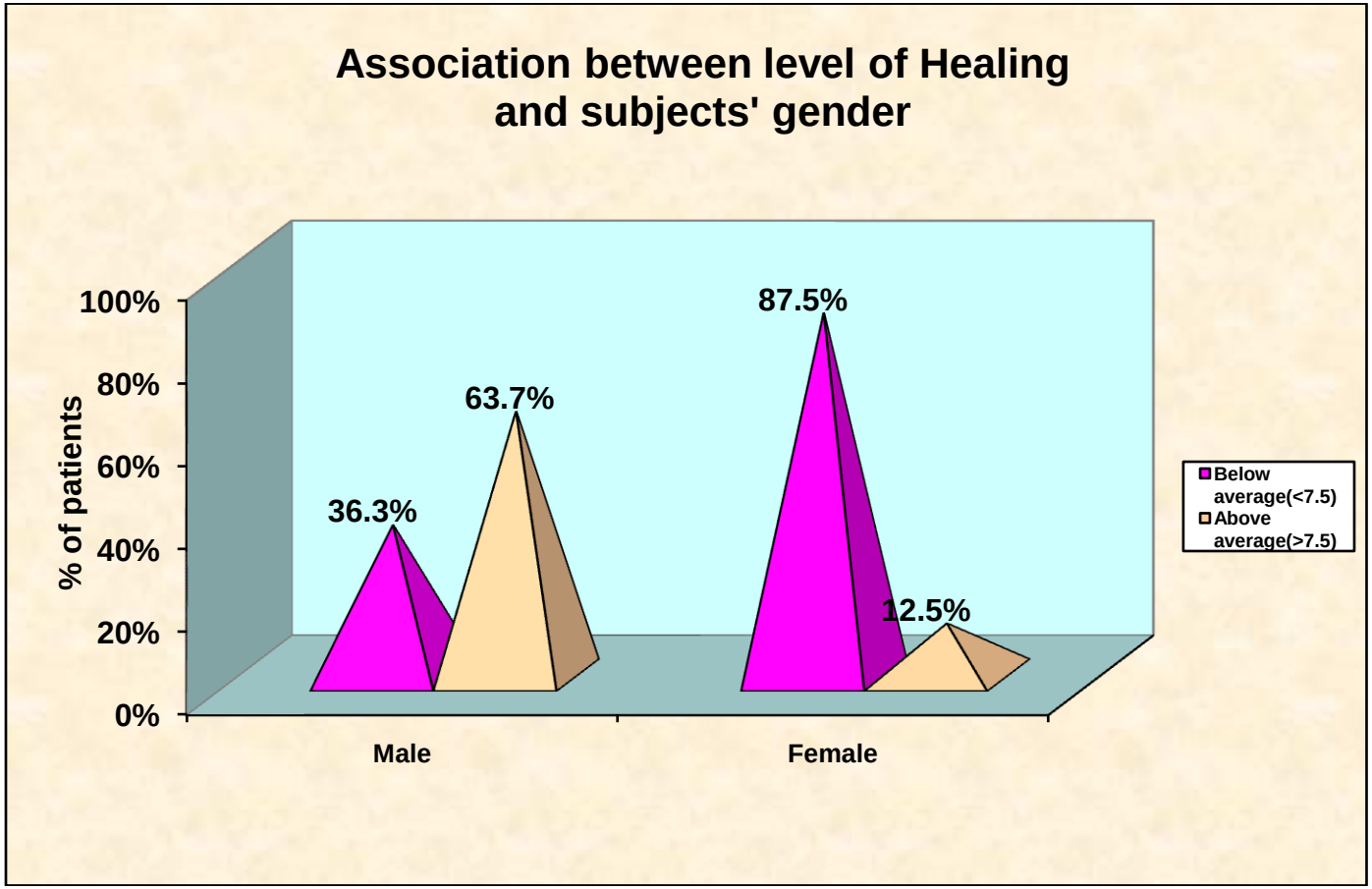


Figure 25: Shows association between level of healing and subject's gender in Experimental group

Table9: Association between Level of Healing score and subjects Personal hygiene variables(Experiment)

		Level of reduction of PUSH score					
		Below average(<7.5)		Above average(>7.5)			
		n	%	n	%	Total	Chi square test
Duration of confined to bed	< 1 month	5	31.2%	11	68.8%	16	$\chi2=6.65$ p=0.04*
	2 -5 month	6	60.0%	4	40.0%	10	
	6 -12 month	4	100.0%	0	00.0%	4	
Measures taken to maintain personal hygiene	Sponging	9	75.0%	3	25.0%	12	$\chi2=9.34$ p=0.02*
	Nail & Hair grooming	2	40.0%	3	60.0%	5	
	Back care	0	00.0%	6	100.0%	6	
	All of above	4	57.1%	3	42.9%	7	
Turning Schedule followed	Every 2 hrs	1	33.3%	2	66.7%	3	$\chi2=0.53$ p=0.46
	Every 4 hrs	1	25.0%	3	75.0%	4	
	Every 6 hrs	10	66.7%	5	33.3%	15	
	None	3	37.5%	5	62.5%	8	
Type of material used for back care	Soap & water	1	50.0%	1	50.0%	2	$\chi2=0.53$ p=0.46
	Plain water	9	50.0%	9	50.0%	18	
	Talcum powder	5	50.0%	5	50.0%	10	
Bed Linen Changing	Daily	5	45.5%	6	54.5%	11	$\chi2=0.53$ p=0.46
	Once a week	6	50.0%	6	50.0%	12	
	Twice a week	4	57.1%	3	42.9%	7	

healing score : pretest score- posttest score

Table no 9shows the association between level of healing and their demographic variables. Less duration in bed ($\chi2=6.65$ p=0.04*) and back care ($\chi2=9.34$ p=0.02*) subjects gained more healing .Statistical significance was calculated using chi square test.

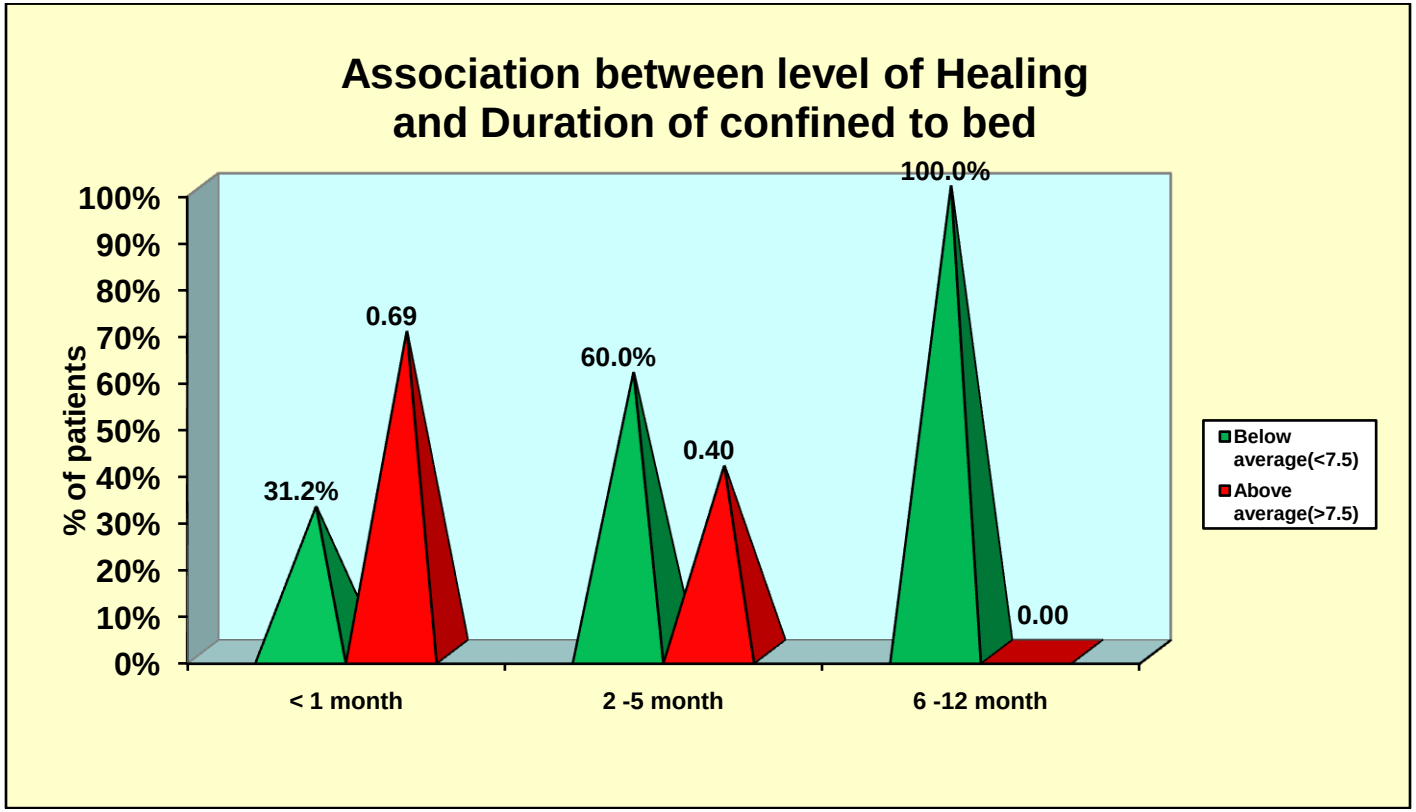


Figure 26: Shows association between level of Healing and Duration of confined to bed

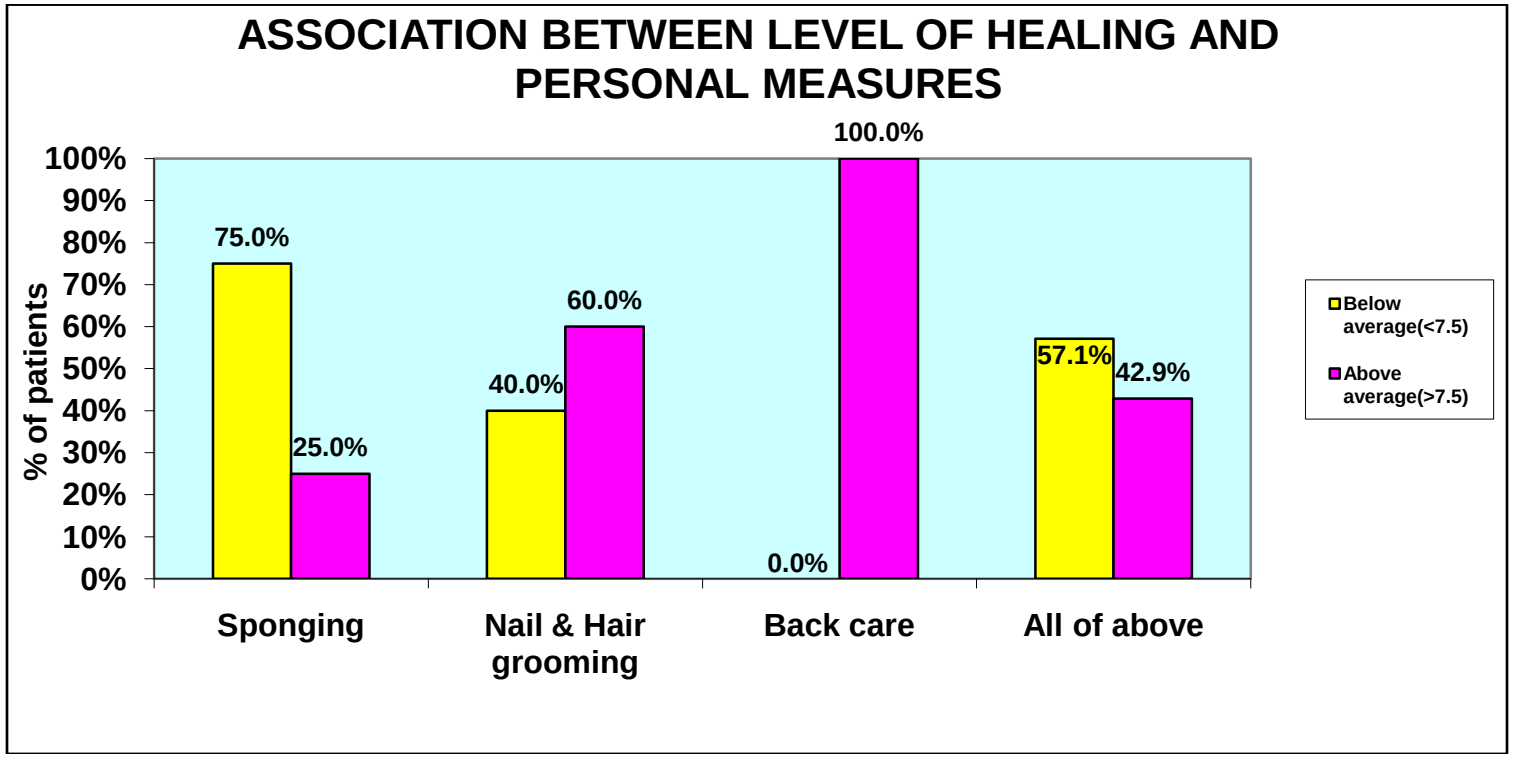


Figure 27: Shows association between level of healing and personal measures

Table10: Association between Level of Healing score and subjects demographic variables(Control)

Demographic variables		Level of reduction of PUSH score: Below average(<5.9) n	%	Above average(>5.9) n	%	Total	Chi square test
Age	30 -40 years	3	42.9%	4	57.1%	7	$\chi 2$=1.24 p=0.74
	40 -50 years	6	60.0%	4	40.0%	10	
	50 -60 years	2	40.0%	3	60.0%	5	
	> 60 years	4	50.0%	4	50.0%	8	
Sex	Male	8	42.1%	11	57.9%	19	$\chi 2$=7.03p=0.01**
	Female	7	63.6%	4	36.4%	11	
Marital status	Married	9	56.3%	7	43.8%	16	$\chi 2$=1.45 p=0.69
	Unmarried	2	66.7%	1	33.3%	3	
	Divorced	2	33.3%	4	66.7%	6	
	Widow	2	40.0%	3	60.0%	5	
Religion	Hindu	11	52.4%	10	47.6%	21	$\chi 2$=0.19 p=0.91
	Muslim	1	50.0%	1	50.0%	2	
	Christian	3	42.9%	4	57.1%	7	
Type of family	Nuclear family	6	46.2%	7	53.8%	13	$\chi 2$=0.13 p=0.71
	Joint family	9	52.9%	8	47.1%	17	
Educational status	Illiterate	7	77.8%	2	22.2%	9	$\chi 2$=7.72 p=0.05*
	Elementary	7	53.8%	6	46.2%	13	
	Higher secondary	1	16.7%	5	83.3%	6	
	Graduate	0	00.0%	2	100.0%	2	
Occupation	Government	1	50.0%	1	50.0%	2	$\chi 2$=0.69 p=0.87
	Private	9	56.3%	7	43.8%	16	
	Pensioner	1	33.3%	2	66.7%	3	
	Unemployed	4	44.4%	5	55.6%	9	
Income	< Rs.1000			4	100.0%	4	$\chi 2$=5.89 p=0.12
	Rs.1000 -2000	7	63.6%	4	36.4%	11	
	Rs.2000 -5000	7	50.0%	7	50.0%	14	
	>Rs.5000	1	100.0%			1	
Area of residence	Rural	7	38.9%	11	61.1%	18	$\chi 2$=2.23 p=0.13
	Urban	8	66.7%	4	33.3%	12	
Dietary pattern	Fat rich diet	3	42.9%	4	57.1%	7	$\chi 2$=0.71 p=0.70
	Carbohydrate rich diet	5	62.5%	3	37.5%	8	
	Protein rich	7	46.7%	8	53.3%	15	

Healing Score : pre assessment score- post assessment score

Table 10: shows the association between level of healing and their demographic variables. Male ($\chi 2=7.03 p=0.01^{**}$) and educated subjects ($\chi 2=7.72$ $p=0.05^{*}$) gained more healing .Statistical significance was calculated using chi square test.

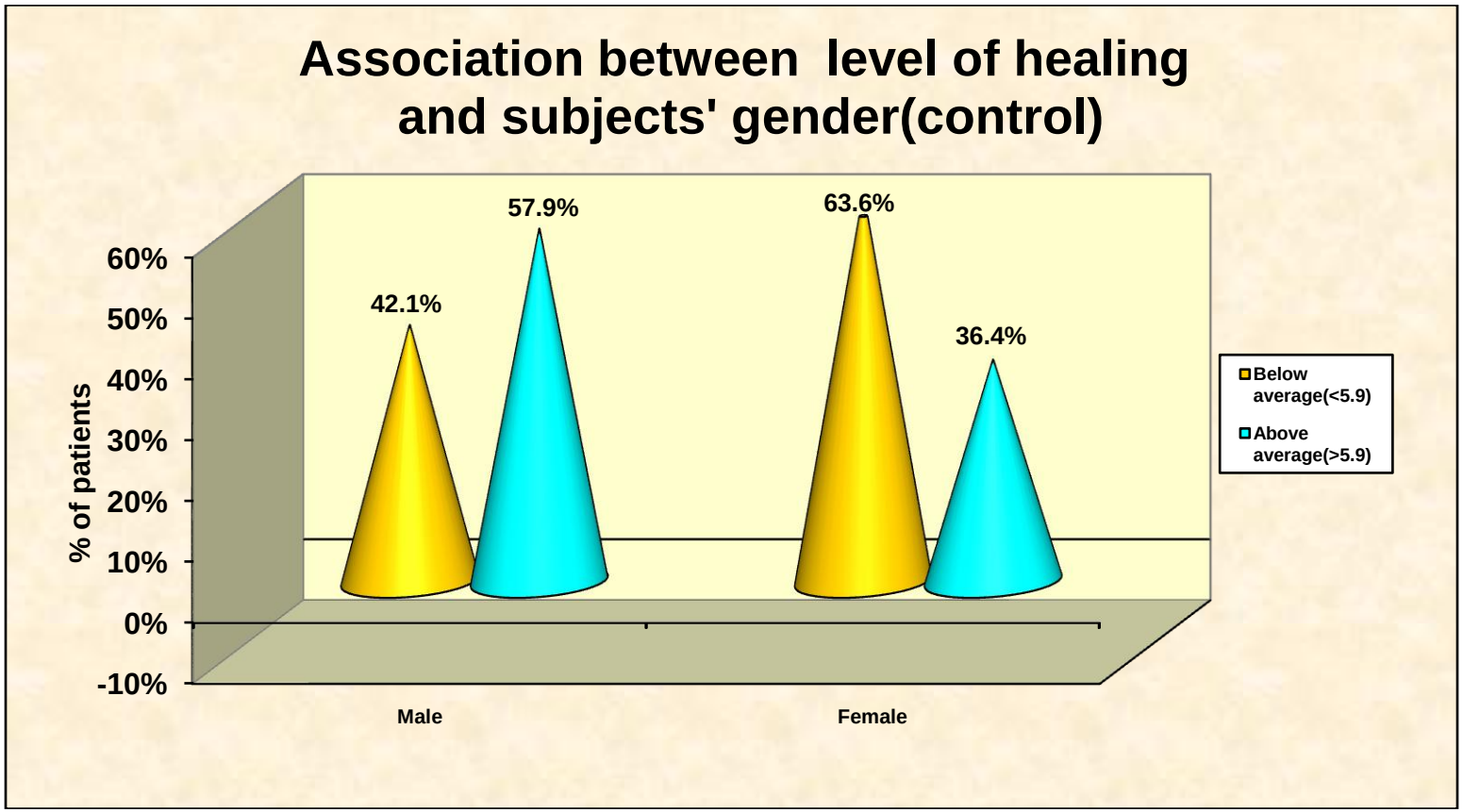


Figure 28: Shows association between level of healing and subjects gender in Control group

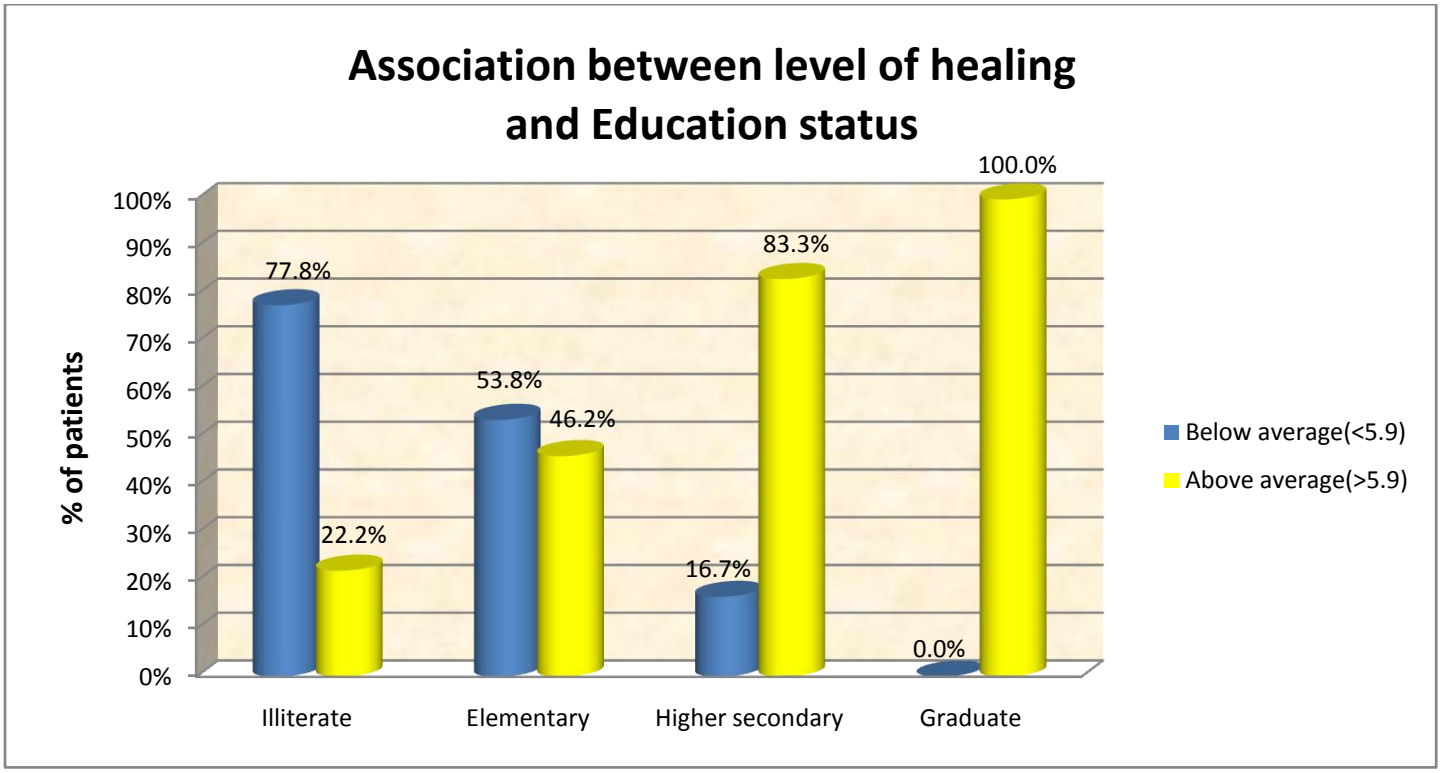


Figure 29: Shows association between level of healing and Education status

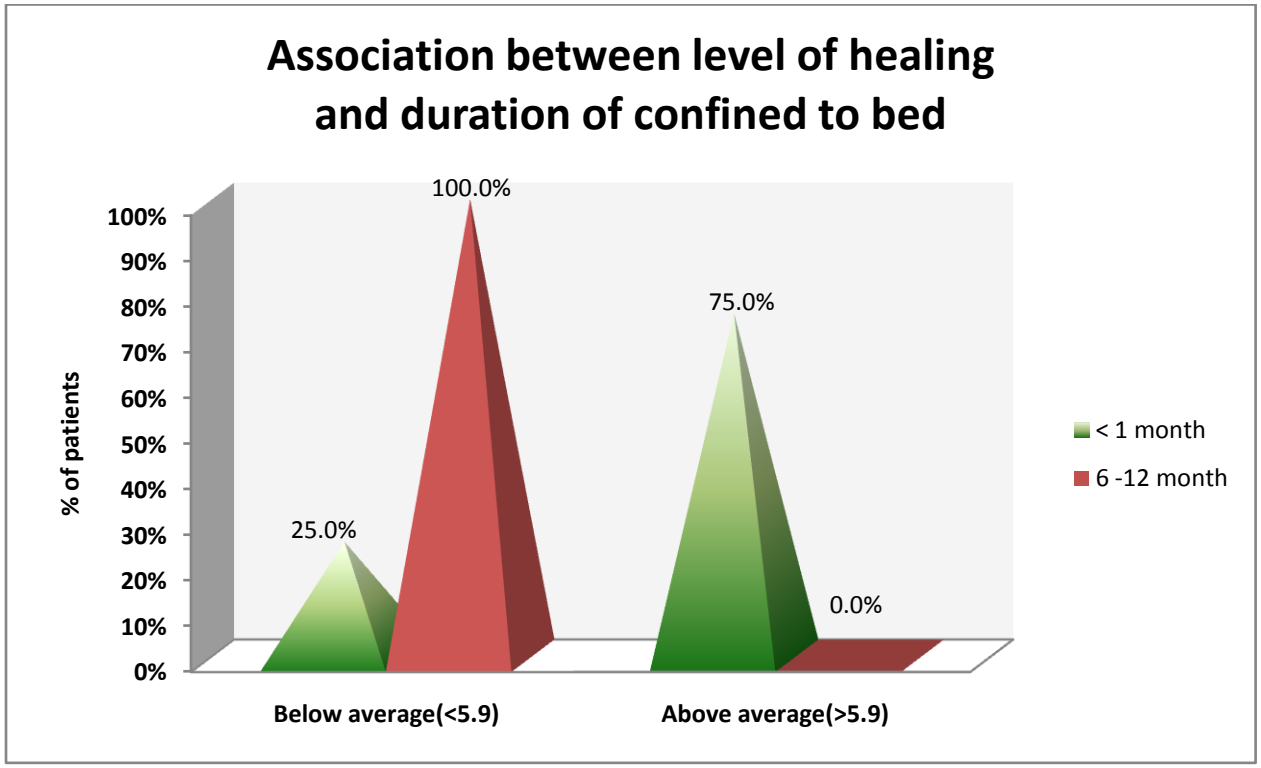


Figure 30: Shows association between level of healing and duration of confined to bed

Table11: Association between Level of Healing score and subjects Personal hygiene variables(Control)

		Level of reduction of PUSH score					
		Below average(<5.9)		Above average(>5.9)			
		n	%	n	%	Total	Chi square test
Duration of confined to bed	< 1 month	3	25.0%	9	75.0%	12	
	2 -5 month	9	60.0%	6	40.0%	15	$\chi 2=6.60$
	6 -12 month	3	100.0%	0	0.0%	3	$p=0.04^*$
Measures taken to maintain personal hygiene	Sponging	3	42.9%	4	57.1%	7	
	Nail & Hair grooming	4	66.7%	2	33.3%	6	$\chi 2=7.98$
	Back care	2	20.0%	8	80.0%	10	$p=0.05^*$
	All of above	6	85.7%	1	14.3%	7	
Turning Schedule followed	Every 2 hrs	3	75.0%	1	25.0%	4	
	Every 4 hrs	2	33.3%	4	66.7%	6	$\chi 2=1.66 p=0.65$
	Every 6 hrs	6	50.0%	6	50.0%	12	
	None	4	50.0%	4	50.0%	8	
Type of material used for back care	Soap & water	2	66.7%	1	33.3%	3	
	Plain water	9	64.3%	5	35.7%	14	$\chi 2=3.40$
	Talcum powder	4	30.7%	9	69.3%	13	$p=0.18$
Bed Linen Changing	Daily	6	46.2%	7	53.8%	13	
	Once a week	7	46.7%	8	53.3%	15	$\chi 2=2.14$
	Twice a week	2	100.0%	0	0.0%	2	$p=0.34$

(FIG 19-20) healing score : pre assessment score- post assessment score

Table no 11shows the association between level of healing and their personal hygiene variables. Less duration in bed ($\chi 2=6.60$ p=0.04*) and back care subjects ($\chi 2=7.98$ p=0.05*) gained more healing .Statistical significance was calculated using chi square test

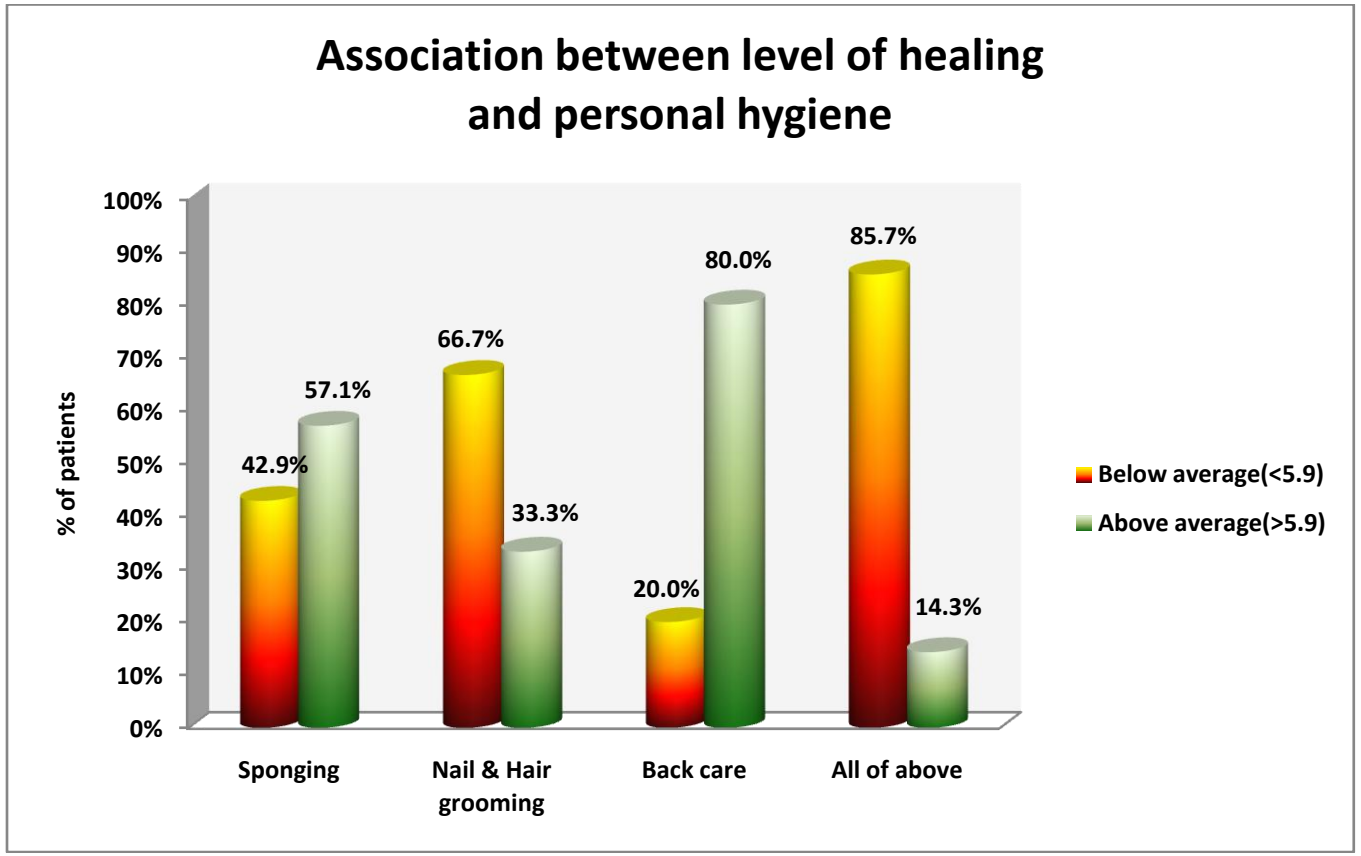


Figure 31: Shows association between level of healing and personal hygiene

CHAPTER-V

DISCUSSION

"Discussion is an exchange of knowledge; argument is an exchange of ignorance"

- Robert Quillen

This chapter concentrates on the findings of this study derived from the statistical analysis and its pertinence to the objectives set for the study. The purpose of the study was "to assess the effectiveness of aloe vera gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital, Chennai – 03."

60 subjects with pressure ulcers were selected by non random convenient sampling method and assigned to Experimental group and Control group, 30 each on the basis of inclusion criteria. The Quasi Experimental study was done to evaluate the effectiveness of aloe vera gel on healing of pressure ulcers among bed ridden subjects.

Pressure ulcer assessment was done by Barbara Braden And Nancy Bergstrom Scale. Routine dressing was done for both Experimental and Control group, Aloe Vera Gel was applied to the Experimental group only. Pre and post assessment of the wound was done by Pressure Ulcer Scale for Healing (PUSH). Data collection was done in one month duration, with the permission of Institutional Ethical Committee.

The collected data was in four sections:

Section 1: Socio- Demographic data

Section 2: Variables related to Personal Hygiene

Section 3: Barbara Bradeb and Nancy Bergstrom Scale for predicting pressure ulcer risk.

Section 4: PUSH Scale (Pressure Ulcer Scale for Healing) for comparision of total scores over time provides an indication of the improvement of deterioration in pressure ulcer healing.

The findings of the study have been discussed with reference to the objectives, relevant study from the review of literature.

Characteristics of the demographic variable:

The characteristics of the demographic variables are described in the forms of frequency and percentage distribution.

Distribution of samples according to their selected demographic variables in Experimental group and control group

Regarding the age, majority of the subjects 9(30%) were between 30-40 years in Experimental group and majority of subjects 10(33.3%) were between 40-50years in control group.

Considering the Sex majority of subjects 22(73.7%) were males in Experimental group and majority of subjects19(63.3%) were males in Control group.

Considering the Religion, majority of subjects 20(66.7%) were Hindus in Experimental group and majority of subjects 21(70%) were Hindus in Control group.

Regarding the Type of Family majority of subjects 17(56.7%) belonged to Joint family in Experimental group and most of the subjects 17(56.7%) belonged to Joint family in Control group.

As for the Educational status, majority of subjects 11(36.7%) were illiterates in Experimental group and most of the subjects 13(43.3%) had completed elementary education in Control group.

Considering the Occupation, majority of subjects 17(56.7%) are private employees in Experimental group and most of the subjects 16(53.3%) are private employees in Control group.

Regarding the marital status, majority of subjects 20(66.7%) are married in Experimental group and most of the subjects 16(53.3%) were married in Control group.

As for the income, majority of subjects 15(50%) get a monthly income of Rs.2000-5000 in Experimental group and most of the subjects 14(46.7%) get a monthly income of Rs.2000-5000 in Control group.

Considering the area of residence, majority of subjects 16(53.3%) belonged to Urban area in Experimental group whereas most of the subjects 18(60%) belonged to Rural area in Control group.

Regarding the dietary pattern, majority of subjects 16(53.3%) used to have protein rich type of diets in Experimental group and also subjects 15(50%) used to have protein rich type of diets in Control group.

The first objective was to assess the pressure ulcers among subjects in experimental and control group.

In Experimental group, when considering the size of the wound, the majority of the samples 11(36.7%) had wound size between 3.1-4 cm. And in control group majority of samples 12 (40%) had wound size between 3.1-4 cm during pre-test.

In considering the exudates amount, majority of samples 29(96.7%) had moderate exudates in Experimental group and in Control group, majority 29 (96.7%) had moderate exudates during pre-test.

In regard to the tissue type, all the samples 30(100%) had granulation tissue in both Experimental group and Control group. There is no statistical difference between Experimental and Control group in pre-test assessment of pressure ulcer.

Dangoisse et al (1997) mentioned in their article that pressure is the primary pathogenic factor in the development of decubitus ulcers. Other major factors are shearing forces, friction and moisture. Significant risk factors are immobility, age related diseases, nutritional status, medications and smoking. Prevention is essential and is best achieved by identification of high-risk subjects. The therapeutic approach is based on the grade of pressure ulcer.

The Knool Assessment tool developed eight risk factors including general status of health, mental status, activity, mobility, incontinence, oral nutrition intake, oral fluid intake and predisposing disease. The total score ranges from 0 to 33. A higher total score indicates a higher risk for pressure ulcer development with a risk score 12 or greater. The last instrument is the Braden Scale which was developed based on the risk factors in a nursing home population. Braden scale composed of six subscales viz. sensory perception, moisture, activity, mobility, nutrition, friction and shear. The total score ranges from 6 to 28. The lower total score indicates higher risk for pressure ulcer development. (Braden and Bergstrom 1989). This instrument is highly reliable for identifying clients at greatest risk for pressure ulcer (Bergstrom 1987).

The second objective was to determine the effectiveness of aloe vera gel in wound healing

Significant difference was found in the post test mean values of level of pain among Experimental and Control group. experiment subjects are having 44.1% of healing score whereas in control group are having 34.8% healing score. This determines the effectiveness of aloe vera gel.

This study was supported by **Fani M, Kohanteb J. (2012)** reported that Aloe vera is a medicinal plant with anti-inflammatory, antimicrobial, antidiabetic and immune-boosting properties. The study concluded that Aloe vera gel at optimum concentration could be used as an antiseptic for prevention of dental caries and periodontal diseases.

Rahmani. N (2010), conducted a study to assess the effects of Aloe Vera cream in reducing postoperative pain, and its promotion of wound healing. Application of Aloe Vera cream on the surgical site is effective in reducing postoperative pain, healing time, and analgesic requirements in the subjects compared with the placebo group**.**

The third objective was to compare the wound healing process among the experimental and control group.

On an average, experiment subjects are having 44.1% of healing score whereas in control group are having 34.8% healing score. Differences between pre assessment and post assessment score was analysed using proportion with 95% CI and mean difference with 95% CI. This difference shows the effectiveness of Aloe Vera Gel in healing of pressure ulcers

Sarakarn P (2010), conducted a study to compare the efficacy of AV and 0.1% Triamcinolone Acetonide (TA) in mild to moderate plaque psoriasis. A randomized, comparative, double-blind, 8-week study was designed. 80 subjects were randomly received AV or 0.1% TA cream and their clinical response were evaluated using the Psoriasis Area Severity Index (PASI) and the Dermatology Life Quality Index (DLQI). Aloe Vera cream may be more effective than 0.1% TA cream in reducing the clinical symptoms of psoriasis; however, both treatments have similar efficacy in improving the quality of life of subjects with mild to moderate psoriasis.

Berger J . (2006) conducted a study to find the effectiveness of Aloe Vera gel and its effects on epithelialization , wound contraction, newly found granulation tissue and regeneration of hair follicles. The results concluded that Aloe Vera Gel improved healing process of the wound when compared with 1% Sulpha diazide cream.

The fourth objective of the study was to find out the association between wound healing process and Aloe Vera Gel with selected demographic variables.

In regard to the association of the demographic variables Younger (X^2=10.94 at P≤0.01**), males (χ2=6.14 P≤0.01**), Less duration in bed (χ2=6.65 p=0.04*) and back care (χ2=9.34 p=0.02*) and protein rich diet (χ2 (=0.56 p=0.75) gained more healing in the Experimental group, None of the other variables were associated with the Demographic variables.

In control group, Males (χ2=7.03p=0.01**), educated subjects (χ2=7.72 p=0.05*), Less duration in bed (χ2=6.60 p=0.04*) and back care subjects (χ2=7.98 p=0.05*) gained more healing.

Moore Z, et al .(2013) conducted a study to provide a critical appraisal of nurses risk assessment and pressure ulcer (PU) preventive practices across Scandinavia, Iceland and Ireland. Risk assessment practice was primarily investigated in the acute care setting and was found to be irregular, based on both numeric scales and clinical judgments. The results concluded that current practice in pressure ulcer prevention is not embedded within best practice recommendations. Therefore, to address the potential subject safety implications, clinical practice could benefit from exploration and identification of practical methods for improving actual pressure ulcer preventive practice.

Chou R, Dana (2013) T, conducted a study to assess the clinical utility of pressure ulcer risk assessment instruments and the comparative effectiveness of preventive interventions in persons at higher risk. Evidence on the effectiveness of nutritional supplementation, repositioning, and skin care interventions versus usual care was limited and had methodological shortcomings, precluding strong conclusions. More advanced static support surfaces are more effective than standard mattresses for preventing ulcers in higher-risk populations.

CHAPTER – VI

SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

"In literature and in life we ultimately pursue, not conclusions, but beginning"

_Sam Tanenhaus

This chapter consists of four sections. In the first two sections, the summary and conclusion are presented. In the last two sections, the implications for nursing practice and the recommendations for further research are presented.

6:1 Summary

A Quasi experimental study was conducted to evaluate the effectiveness of Aloe Vera Gel in healing pressure of ulcers in Experimental group and Control group among 60 subjects selected by non-random convenient sampling technique and Barbara Braden and Nancy Bergstrom Scale was used to assess the risk of pressure ulcer.. The Conceptual Framework was used based on Modified Wiedenbach's theory of helping art clinical nursing (1964). Pre and Post assessment of the ulcer was assessed by Pressure ulcer scale for healing (PUSH). Findings were analysed using descriptive and Inferential Statistics.

6:2 Major findings are summarised as follows

Regarding the age, majority of the subjects 9(30%) were between 30-40 years in Experimental group and majority of subjects 10(33.3%) were between 40-50years in Control group.

Considering the sex majority of subjects 22(73.7%) were males in Experimental group and majority of subjects19(63.3%) were males in Control group.

In considering the religion, majority of subjects 20(66.7%) were Hindus in Experimental group and majority of subjects 21(70%) were Hindus in Control group.

Regarding the type of family majority of subjects 17(56.7%) belonged to Joint family in Experimental group and most of the subjects 17(56.7%) belonged to Joint family in Control group.

As for the Educational status, majority of subjects 11(36.7%) were illiterates in Experimental group and most of the subjects 13(43.3%) had completed elementary education in Control group.

Considering the occupation, majority of subjects 17(56.7%) are private employees in Experimental group and most of the subjects 16(53.3%) are private employees in Control group.

Regarding the marital status, majority of subjects 20(66.7%) were married in Experimental group and most of the subjects 16(53.3%) were married in Control group.

As for the income, majority of subjects 15(50%) get a monthly income of Rs.2000-5000 in Experimental group and most of the subjects 14(46.7%) get a monthly income of Rs.2000-5000 in Control group.

Considering the area of residence, majority of subjects 16(53.3%) belonged to Urban area in Experimental group whereas most of the subjects 18(60%) belonged to Rural area in Control group.

Regarding dietary pattern, majority of subjects 16(53.3%) used to have protein rich type of diets in Experimental group and most of the subjects 15(50%) used to have protein rich type of diets in Control group.

Experiment subjects are having **44.1%** of healing score whereas in control group are having **34.8%** healing score. Differences between pre assessment and post assessment score was analysed using proportion with 95%

CI and mean difference with 95% CI. This difference shows the effectiveness of Aloe Vera Gel in healing of pressure ulcers

Younger (X^2=10.94 at P≤0.01**) and male subjects (χ2=6.14 P≤0.01**) gained more healing in Experimental group. Statistical significance was calculated using chi square test.

Less duration (χ2=6.65 p=0.04*) in bed and back (χ2=9.34 p=0.02*) care receiving subjects gained more healing in Experimental group. Statistical significance was calculated using chi square test.

Male (χ2=7.03p=0.01**) and educated subjects (χ2=7.72 p=0.05*) gained more healing in control group .Statistical significance was calculated using chi square test.

Less duration in bed (χ2=6.60 p=0.04*) and back care subjects (χ2=7.98 p=0.05*) gained more healing in control group.

6:3 Implications

The findings of the study have implication in different branches of nursing that is, Nursing Practice, Nursing Education, Nursing Administration and Nursing Research. By evaluating the effectiveness of Aloe Vera Gel in healing of pressure ulcers among bedridden subjects the investigator received a clear picture regarding the different steps to be taken in different fields to improve the same.

Nursing Practice

- The nursing care of bed ridden subjects should understand the complications of pressure ulcer and nursing measures to prevent pressure ulcer.
- Nurses play a vital role in providing personal hygiene to the subjects who are at risk of developing pressure ulcer. Barbara Braden and Nancy

Bergstrom Scale can be used to assess the risk of pressure ulcer and Aloe Vera Gel can be used to treat pressure ulcer for quick healing.

- Nurses working in hospital, old age and community should educate the care givers in order to prevent pressure ulcer in the bed ridden subjects.

Nursing Education

- The nurses and students can be taught about the use of Aloe Vera in treatment of pressure ulcers.
- In service education programmes and continuing nursing education programmes can be organised for students and nurses.

Nursing Administration

- Nursing leaders should take active part in policy making , developing protocol and implementing innovative procedures in the management of pressure ulcer.
- Refresher courses can be conducted as these will as these will update the knowledge and practice of nurses who are caring for bed ridden subjects.
- Educational guidance can be prepared and distributed to the care givers of the bedridden subjects on prevention of pressure ulcer.
- The nursing administrator can organise conference, seminars and work shop for nurses working in hospitals to encourage a positive attitude on Aloe Vera Gel on pressure ulcers for bed ridden subjects.

Nursing Research

- The study will be a strong source of evidence based practice.
- The findings of the present study can be disseminated at various conference proceedings.
- This study may be used for further reference, further large scale study can be done as replication to standardise the application of Aloe Vera on wound healing among pressure ulcer subjects.

6:4 Recommendations

- A similar study can be conducted on a large sample to generalise the findings.
- A similar study can be replicated in different settings.
- Holistic nursing interventions need to be provided to bed ridden subjects in order to prevent pressure ulcers.
- Braden scale can be used to assess the bed ridden subjects who are at high risk of developing pressure ulcer.
- PUSH scale (Pressure Ulcer Scale for Healing) can be utilised when caring for subjects with pressure ulcer.
- Aloe Vera Gel an amazing mixture of more than 200 constituents including poly saccharides, enzymes, glycoproteins, amino acids, vitamins and minerals which helps to reduce inflammation, speed the healing of wounds, ameliorate pain, improve vascular flow and reduces scarring.
- A short term course on “Prevention and Treatment of pressure ulcer” can be conducted to the staff nurses.
- Further research can be conducted with Aloe Vera Gel to treat other types of ulcer, wounds and other skin problems.
- Further research can be conducted for analysing the cost benefits of Aloe Vera Gel.
- A comparative study can be carried out using other medications for treatment of pressure ulcers.

- A study can be conducted among care givers of bed ridden subjects after structured teaching programme on prevention of pressure ulcers.

6:5 Conclusion

This study was to evaluate the effectiveness of Aloe Vera Gel in healing of pressure ulcers among subjects admitted at Rajiv Gandhi Government General hospital, Chennai-3. The findings of the study showed that Aloe Vera Gel was effective in healing of pressure ulcers in subjects. There was association between the level of healing and demographic variables. As complementary therapies are effective in healing of pressure ulcers in subjects without any complications, it can be adopted by every health care professional to improve healing and reduce the time period of healing among subjects with superficial pressure ulcers.

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SOCIO DEMOGRAPHIC PROFILE:

Sample no :

1. Age of the person
   a) 30 - 40 years ☐ b) 40 -50 years ☐ c) 50 - 60 years ☐
   d) Above 60 years ☐

2. Sex
   a). Male ☐ b). Female ☐

3. Marital status
   a) Married ☐ b) Unmarried ☐ c) Divorced ☐
   d) Widower / widow ☐

4. Religion
   a) Hindu ☐ b) Muslim ☐ c) Christian ☐
   d) Others ☐

5. Type of family
   a) Nuclear ☐ b) Joint ☐ c) Broken ☐

6. Educational status
   a) Illiterate ☐ b) Elementary ☐ c) Higher secondary ☐
   d) Graduate and above ☐

7. Occupation
   a) Government ☐ b) Private ☐ c) Pensioner ☐
   d) Unemployed ☐

8. Income

a) < Rs 1000 / month ☐ b) Rs 1000- 2000 / month ☐

c) Rs 2000- 5000 / month ☐ d) > Rs 5000 /month ☐

9. Area of residence

a) Rural ☐ b) Urban ☐

10. Dietary pattern

a) Fat rich diet ☐ b) Carbohydrate rich ☐ c) Protein rich ☐

QUESTIONS RELATED TO PERSONAL HYGIENE

1. The duration of which he or she is confined to bed.

a) < 1 month ☐ b) 2-5 months ☐ c) 6-12 months ☐ d) > 1 year ☐

2. Measures taken to maintain personal hygiene.

a) Sponging ☐ b) Nail & Hair grooming ☐ c) Back care ☐ d) All of above ☐

3. Turning schedule followed for the patients.

a) Every 2 hrs ☐ b) Every 4 hrs ☐ c) Every 6 hrs ☐ d) None ☐

4. Type of material used for back care.

a) Soap & Water ☐ b) Plain Water ☐ c) Talcum Powder ☐ d) Others ☐

5. Changing the bed linen.

a) Daily ☐ b) Once a week ☐ c) Twice a week ☐ d) Thrice a week ☐

Pressure Ulcer Scale for Healing (PUSH)

Sample No._____ Date_____ Ulcer Location_____

Directions:

Observe and measure the pressure ulcer. Categorize the ulcer with respect to surface area, exudate, and type of wound tissue. Record a sub-score for each of these ulcer characteristics. Add the sub-scores to obtain the total score. A comparison of total scores measured over time provides an indication of the improvement of deterioration in pressure ulcer healing.

S.No.	Characteristic of Wound	Size of the Wound	Score	Patient Score			
				Day 1	Day 5	Day 10	Day 15
1.	Length x Width (in cm^2)	• 0 • <0.3 • 0.3-0.6 • 0.7-1.0 • 1.1-2.0 • 2.1-3.0 • 3.1-4.0 • 4.1-8.0 • 8.1-12.0 • 12.1-24.0 • >24.0	0 1 2 3 4 5 6 7 8 9 10				
2.	Exudate Amount	• None • Light • Moderate • Heavy	0 1 2 3				
3.	Tissue Type	• Closed • Epithelial Tissue • Granulation Tissue • Slough • Necrotic Tissue	0 1 2 3 4				
TOTAL SCORE							

Length x Width : Measure the greatest length (head to toe) and the greatest width (side to side) using a centimeter ruler. Multiply these **two** measurements (length x width) to obtain an estimate of surface area in square centimeters (cm^2). Caveat: Do not guess! Always use a centimeter ruler and always use the same method each time the ulcer is measured.

Exudate Amount: Estimate the amount of exudates (drainage) present after removal of the dressing and before applying and topical agent to the ulcer. Estimate the exudates (drainage) as none, light, moderate and heavy.

Tissue Type: This refers to the types of tissue that are present in the wound (ulcer) bed. Score as a "4" if there is any necrotic tissue present Score as a "3" if there is any amount of slough present and necrotic tissue is absent. Score as a "2" if the wound is clean and contains granulation tissue. A superficial wound that is reepithelializing is scored as a "1". When the wound is closed socre as a "0".

4 - Necrotic Tissue (Eschar) : black brown, or tan tissue that adheres firmly to the wound bed or ulcer

edges and may be either firmer or softer than surrounding skin.

3 - Slough : Yellow or white tissue that adheres to the ulcer bed in strings or thick clumps or is mucinous.

2 - Granulation Tissue : Pink or beefy red tissue with a shiny, moist, granular appearance.

1 - Epithelial Tissue : for superficial ulcers, new pink or shiny tissue (skin) that grows in from the edges or as

islands on the ulcer surface.

0 - Closed / Resurfaced : the **wound** is completely covered with epithelium (new skin)

BRADEN SCALE – FOR PREDICTING PRESSURE SORE RISK

S.NO.	RISK FACTORS	SCORE / DESCRIPTION	PREDICTED SCORE	PATIENT SCORE
1.	SENSORY PERCEPTION	Completely limited Very limited Slightly limited No Impairment	1 2 3 4	
2.	MOISTURE	Constantly Moisture Often Moist skin Occasionally Moist Rarely Moist	1 2 3 4	
3.	ACTIVITY	Bed Fast Chair Fast Walks Occasionally Walks Frequently	1 2 3 4	
4.	MOBILITY	Completely immobile Very Limited Slightly Limited No Limitations	1 2 3 4	
5.	NUTRITION	Very poor Probably Inadequate Adequate Excellent	1 2 3 4	
6.	FRICTION AND SHEAR	Problem Potential Problem No Apparent Problem	1 2 3	

Severe risk **≤ 9**

High risk **10-12**

Moderate risk **13-14**

Mild risk **15-18**

Lr. No. 285/CON/MMC/Chennai-3 dt 16.7.13.

From:

Mrs. A.Thenmozhi ,
M.Sc (Nursing) II year,
College of Nursing,
Madras Medical College,
Chennai-3.

To:

The Dean,
Madras Medical College,
Chennai-03.

Through Proper Channel,

Respected Sir,

Sub: Requesting Permission to conduct a research study - reg

I, A.Thenmozhi, studying M.Sc.Nursing II year, College of nursing, Madras Medical college, kindly request you to grant me permission for the study proposed to conduct on the topic **"A study to assess the effectiveness of Aloe vera Gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government Hospital, Chennai. - 03"** to fulfill the requirement of data collection. I assure you that it will not interfere with routine activities of the study settings.

Forwarded
16/07/13

Thanking you,

Date: 16-07-2013
Place: Chennai - 03

Yours obediently,

(A.Thenmozhi)

INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI

EC RegNo.ECR/270/Inst./TN/2013 Date: 29.07.2013

Telephone No : 044 25305301
Fax : 044 25363970

CERTIFICATE OF APPROVAL

To
A.Thenmozhi,
M.Sc.,(N) II year,
College of Nursing,
Madras Medical College, Chennai-3.

Dear Thenmozhi

The Institutional Ethics committee of Madras Medical College, reviewed and discussed your application for approval of the proposal entitled "A Study to assess the effectiveness of Aloe vera gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital, Ch.03" No.06072013.

The following members of Ethics Committee were present in the meeting held on 06.07.2013 conducted at Madras Medical College, Chennai -3.

1. Dr.G.SivaKumar, MS FICS FAIS -- Chairperson
2. Prof. R. Nandhini MD -- Member Secretary
   Director, Instt. of Pharmacology ,MMC, Ch-3
3. Prof. Shyamraj MD -- Member
   Director i/c , Instt. of Biochemistry , MMC, Ch-3
4. Prof. P. Karkuzhali. MD -- Member
   Prof., Instt. of Pathology, MMC, Ch-3
5. Prof. Kalai Selvi -- Member
   Prof of Pharmacology, MMC, Ch-3
6. Prof. Siva Subramanian, -- Member
   Director, Instt. of Internal Medicine, MMC, Ch-3
7. Thiru. S. Govindsamy. BABL -- Lawyer
8. Tmt. Arnold Saulina MA MSW -- Social Scientist

We approve the proposal to be conducted in its presented form.

Sd/ Chairman & Other Members

The Institutional Ethics Committee expects to be informed about the progress of the study, and SAE occurring in the course of the study, any changes in the protocol and patients information / informed consent and asks to be provided a copy of the final report.

R Nandini

Member Secretary, Ethics Committee

Lr.No. 285/CON/MMC/Chennai-3 dt 16.7.13.

From:

Mrs. A. Thenmozhi ,
M.Sc (Nursing) II year,
College of Nursing,
Madras Medical College,
Chennai-3.

To:

The Professor and HOD,
Department of Internal Medicine,
Rajiv Gandhi Government General Hospital,
Chennai-03.

Permitted Kindly 20/7/13

Through Proper Channel,

Respected Sir,

Sub: Requesting Permission to conduct a research study - reg

I, Mrs.A.Thenmozhi, studying M.Sc.Nursing II year, College of nursing, Madras Medical college, kindly request you to grant me permission for the study proposed to conduct on the topic **"A study to assess the effectiveness of Aloe vera Gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital, Chennai-03."** to fulfill the requirement of data collection. I assure you that it will not interfere with routine activities of the study settings.

Forwarded 16/7/13

Thanking you,

Date: 16-07-2013

Place: Chennai - 03

Yours obediently,

A. Thenmozhi

(A. Thenmozhi)

CERTIFICATE OF CONTENT VALIDITY

This is to certify that a tool prepared by Mrs. A.Thenmozhi, M.Sc. Nursing, II year of College of Nursing, Madras Medical College, undertaking a research study on "**A study to assess the effectiveness of Aloe Vera Gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital, Chennai - 03"** has been validated by me and is found to be valid and up to date and she can proceed with this tool to conduct the main study.

Signature : 31/8/13

Name : DIRECTOR AND PROFESSOR
Institute of Internal Medicine
Madras Medical College,
Govt. General Hospital,
Madras-600 003

Designation :

Date :

Place :

Seal :

EVALUATION CHECKLIST FOR THE VALIDATION OF TOOL

Name of the expert:

Kindly go through the tool and give your valuable opinion in the criteria table. If the tool is not meeting the criteria, please give your valuable suggestions in the remarks column.

S.No	CRITERIA	MODIFICATIONS	SUGGESTIONS
1.	Proforma for social demographic data	- NIL -	- NIL -
2.	Tool and check list	Correct.	She can go ahead with title.

31/8/13.

Signature of the expert

DIRECTOR AND PROFESSOR
Institute of Internal Medicine
Madras Medical College,
Govt. General Hospital,
Madras-600 003

CERTIFICATE OF CONTENT VALIDITY

This is to certify that a tool prepared by Mrs. A.Thenmozhi, M.Sc. Nursing, II year of College of Nursing, Madras Medical College, undertaking a research study on **"A study to assess the effectiveness of Aloe Vera Gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital, Chennai - 03"** has been validated by me and is found to be valid and up to date and she can proceed with this tool to conduct the main study.

Signature :

PRINCIPAL
MADHA COLLEGE OF NURSING
MADHANAGAR, KUNDRATHUR
CHENNAI - 600 069
PHONE: 24780736

Name :

Designation :

Date :

Place :

Seal :

From:
Mrs. A. Thenmozhi,
M.Sc (Nursing) II year,
College of Nursing,
Madras Medical College,
Chennai-03.

To:
The Professor and HOD,
Department of Internal Medicine,
Rajiv Gandhi Government General Hospital,
Chennai-03.
Through Proper Channel,

Respected Sir,

Sub: Requesting Permission to conduct a research study –reg

I, Mrs. A. Thenmozhi, studying M.sc.Nursing II year, College of Nursing, Madras Medical College, kindly request you to grant me permission for the study proposed to conduct on the topic **"A study to assess the effectiveness of Aloe Vera Gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital, Chennai- 03"**, to fulfill the requirement of data collection. I assure you that it will not interfere with routine activities of the study settings.

Thanking you,

Date: 16.07.2013

Place: Chennai-03

Yours Obediently,

(A. THENMOZHI)

DEPUTY SUPERINTENDENT
GOVERNMENT GENERAL HOSPITAL
CHENNAI-600 003

From

Mrs. A. Thenmozhi,
M.Sc (Nursing) II year,
College of Nursing,
Madras Medical College,
Chennai-03.

To

The Professor and HOD,
Department of General Surgery,
Rajiv Gandhi Government General Hospital,
Chennai-03.

Through Proper Channel,

Respected Sir,

Sub: Requesting Permission to conduct a research study –Reg.

I, Mrs. A. Thenmozhi, studying M.sc. Nursing II year, College of Nursing, Madras Medical College, kindly request you to grant me permission for the study proposed to conduct on the topic **"A study to assess the effectiveness of Aloe Vera Gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital, Chennai- 03".** to fulfill the requirement of data collection. I assure you that it will not interfere with routine activities of the study settings.

Thanking you,

Yours Obediently,

Date :

Place : Chennai-03

(A.Thenmozhi)

Dr. S. DEIVANAYAGAM, M.S.,
Reg. No: 32557
Professor & HOD of Surgery
Madras Medical College & RGGGH
Chennai-600 003

From

Mrs. A. Thenmozhi,
M.Sc (Nursing) II year,
College of Nursing,
Madras Medical College,
Chennai-03.

To

The Director,
Institute of Orthopaedics,
Rajiv Gandhi Government General Hospital,
Chennai-03.

Through Proper Channel,

Respected Sir,

Sub: Requesting Permission to conduct a research study –Reg.

I, Mrs. A. Thenmozhi, studying M.sc. Nursing II year, College of Nursing, Madras Medical College, kindly request you to grant me permission for the study proposed to conduct on the topic **"A study to assess the effectiveness of Aloe Vera Gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital, Chennai- 03".** to fulfill the requirement of data collection. I assure you that it will not interfere with routine activities of the study settings.

Thanking you,

Yours Obediently,

Date :

Place : Chennai-03

(A.Thenmozhi)

Prof. Dr. M.R. RAJASEKAR, M.S.(Orth)
Director & Professor,
Prof. of Ortho, Madras Medical College,
Ortho Surgeon, Institute of Orthopaedics & Traumatology,
Govt. General Hospital, Chennai-3

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the Dissertation " **A study to assess the effectiveness of Aloe Vera Gel in healing of pressure ulcers among patients admitted at Rajiv Gandhi Government General Hospital, Chennai – 03**" done by **Mrs. A. Thenmozhi, M.Sc (N)** II Year, College of Nursing, Madras Medical College, Chennai – 03, has been edited for English Language appropriateness.

NAME:

DESIGNATION:

NAME OF THE INSTITUTION:

SIGNATURE:

SEAL:

A. MICHAEL RAJ, B.A., B.Ph., B.Th.,
Master Michael's Spoken English Centre
789/253, T.H. ROAD, CHENNAI-600 021.
☎: 2593 0699 Cell: 94444 78937

ஆய்வு தகவல் தாள்

பங்கேற்பாளர் பெயர் :

ஆராய்ச்சியாளர் பெயர் :

ஆய்வு தலைப்பு : **படுக்கை புண் ஆற்றும் முறையில் சோற்றுக் கற்றாழை களிம்பின் திறனை பற்றிய ஓர் ஆய்வு.**

இந்த ஆய்வு சென்னை ராஜீவ்காந்தி அரசு பொது மருத்துவமனையின் தேர்ந்தெடுக்கப்பட்ட உள்நோயாளிகள் பிரிவில் மேற்கொள்ளப்பட உள்ளது.

நீங்கள் இந்த ஆய்வில் பங்கேற்க அழைக்கிறோம். நீங்கள் இந்த ஆய்வில் பங்கேற்கலாமா அல்லது வேண்டாமா? என்பதை முடிவு செய்ய இந்த ஆவணத்தில் உள்ள தகவல் உதவியாக இருக்கும். உங்களுக்கு ஏதேனும் சந்தேகம் இருந்தால் நீங்கள் எங்களிடம் வெளிப்படையாக கேட்கலாம்.

எங்களுடைய அடிப்படை தகுதிகளில் நீங்கள் திருப்தியாக இருப்பதால் உங்களை இந்த ஆய்வில் பங்கேற்க அழைக்கிறோம்.

ஆய்வின் நோக்கம் மற்றும் செயல்பாடு:

படுக்கை புண் ஆற்றும் முறையில் சோற்றுக் கற்றாழை களிம்பின் திறனை பற்றிய ஆய்வு.

இந்த ஆய்வில் உங்கள் பெயர், வயது, பரிந்துரைக்கப்பட்ட மருந்து களின் பெயர், சிகிச்சை கால அளவு ஆகிய தகவல்கள் பெற்றுக் கொள்வோம்.

சில தகவல்கள் உங்களிடம் பெறப்படும்:

உங்களுக்கு உங்களுடைய மருத்துவத் தகவலை இரகசியமாக வைக்க உரிமை உண்டு. நீங்கள் இந்த ஆய்வில் கையொப்பமிடுவதால் நீங்கள் உங்களுடைய தகவலை ஆய்வு குழு மற்றும் நிறுவனத்திடம் காட்ட வேண்டும். இந்த ஆராய்ச்சியின் தகவல்கள் விஞ்ஞான இதழ்கள் மற்றும் விஞ்ஞான கூடத்தில் வெளியிடப்பட்டாலும் உங்களுடைய அடையாளங்கள் காட்டப்படமாட்டாது.

ஆராய்ச்சியாளர் கையொப்பம்
தேதி:

பங்கேற்பாளர் கையொப்பம்
தேதி:

சுய ஒப்புதல் படிவம்

ஆய்வு செய்யப்படும் தலைப்பு

"யுக்கை புண் ஆற்றும் முறையில் சோற்றுக் கற்றாழை களிம்பின் திறனை பற்றிய ஓர் ஆய்வு"

பங்கு பெறுபவரின் பெயர்: வயது: தேதி: உள் நோயாளி எண்:

..... என்பவராகிய நான் இந்த ஆய்வின் விவரங்களும் அதன் நோக்கங்களும் முறையாக அறிந்து கொண்டேன். எனது சந்தேகங்கள் அனைத்திற்கும் தகுந்த விளக்கம் அளிக்கப்பட்டது. இந்த ஆய்வில் முழு சுதந்திரத்துடன் மற்றும் சுயநினைவுடன் பங்கு கொள்ள சம்மதிக்கிறேன்.

எனக்கு விளக்கப்பட்ட விஷயங்களை நான் புரிந்துகொண்டு நான் எனது சம்மதத்தைத் தெரிவிக்கிறேன். இச்சுய ஒப்புதல் படிவத்தை பற்றி எனக்கு விளக்கப்பட்டது.

இந்த ஆய்வினை பற்றிய அனைத்து தகவல்களும் எனக்கு தெரிவிக்கப்பட்டது. இந்த ஆய்வில் எனது உரிமை மற்றும் பங்கினை பற்றி அறிந்து கொண்டேன்.

இந்த ஆய்வில் பிறரின் நிர்பந்தமின்றி என் சொந்த விருப்பத்தின்பேரில் தான் பங்கு பெறுகிறேன் மற்றும் நான் இந்த ஆராய்ச்சியிலிருந்து எந்நேரமும் பின்வாங்கலாம் என்பதையும் அதனால் எந்த பாதிப்பும் ஏற்படாது என்பதையும் நான் புரிந்து கொண்டேன்.

இந்த ஆய்வில் கலந்து கொள்வத **A. MICHEAL RAJ**
ஆய்வாளர் இன்ஸ்டிட்யூசனல் எத்திக்ஸ் கமிட்டியினாடமோ, அரசு நிறுவனத்திடமோ தேவைப்பட்டால் பகிர்ந்து கொள்ளலாம் என சம்

MASTER IN ENGLISH

இந்த ஆய்வின் முடிவுகளை
அடையாளமோ வெளியப்படாது என அறிந்து கொண்டேன். இந்த ஆய்வின் விவரங்களைக் கொண்ட தகவல்தாளைப் பெற்றுக் கொண்டேன். இந்த ஆய்விற்காக உடலை தொட்டு பரிசோதனை செய்துக் கொள்ள சம்மதிக்கிறேன்.

இந்த ஆய்வில் பங்கேற்கும்பொழுது ஏதேனும் சந்தேகம் ஏற்பட்டால், உடனே ஆய்வாளரை தொடர்பு கொள்ள வேண்டும் என அறிந்து கொண்டேன்.

நான் இந்த ஆய்வில் உடலை தொட்டு பரிசோதிக்க சம்மதிக்கிறேன்.

இச்சுய ஒப்புதல் படிவத்தில் கையெழுத்திடுவதன்மூலம் இதிலுள்ள அனைத்து விஷயங்களும் எனக்கு தெளிவாக விளக்கப்பட்டது என்று தெரிவிக்கிறேன். இச்சுய ஒப்புதல் படிவத்தின் ஒரு நகல் எனக்கு கொடுக்கப்படும் என்று தெரிந்து கொண்டேன்.

ஆராய்ச்சியாளர் கையொப்பம்
தேதி:

பங்கேற்பாளர் கையொப்பம்
தேதி:

PROCEDURE FOR ALOE VERA GEL DRESSING

INTRODUCTION:

Skin integrity is important to maintain and restore health and nurses play a vital role in assessing and intervening to prevent skin disruptions and promote wound healing.

Impaired sensory function and the inability to make appropriate positional changes are the most influential factors in the development of pressure ulcers. The nurse take care of the activities of daily living of a subject and should provide holistic care. .

DEFINITION:

Refers to the application of Aloe Vera Gel in healing of pressure ulcers, at ulcer site that is the positive outcome expected by the researcher.

INTRINSIC CONTRIBUTING FACTORS INCLUDE:

- Malnutrition
- Dehydration
- Impaired mobility
- Chronic conditions
- Decreased LOC
- Infection
- Advance age
- Steroid use
- Pressure ulcer present
- Impaired sensation

EXTERNAL CONTRIBUTING FACTORS INCLUDE:

- Pressure
- Friction
- Moisture
- Incontinence
- Shear

ALOE VERA GEL:

- Aloe vera (syn. Aloe barbadensis Mill., Fam. Liliaceae), also known as Barbados or Curaçao Aloe, has been used in traditional and folk medicines for thousands of years to treat and cure a variety of diseases.
- The most common folk use of aloe has been for the treatment of burn wounds and specifically to aid in the healing process, reduce inflammation, and tissue scaring.
- The gel was described by Dioscorides and used to treat wounds and mouth infections, soothe itching and cure sores.

Commercial preparation used for the study : Himalaya aloe vera gel – herbal Product.

Dose: 30% Aloe vera in a hydrophilic emulsion form once daily to affected area.

EQUIPMENTS:

Dressing Trolley contains:

- Sterile Cheatle forceps to transfer the sterile dressing materials
- Steile Dressing Instruments in a sterile tray.
- Cleaning solutions like Normal Saline, Betadine solution
- Sterile Aloe Vera Gel which is commercially prepared.
- Privacy
- Adhesive tape
- Plastesr cutting scissor
- Wooden Spatula
- Plastic apron, cap and mask
- Ruler and Trace paper to measure the wound size.

PROCEDURE:

- Explain the procedure to the subject and care givers to get co-operation.

Arrange the sterile dressing materials and articles near the bedside of the subject

Provide privacy

Wash hands and wear gloves.

- Remove and discard the soiled dressing
- Wash hands and change the gloves.
- Clean the wound with routine hospital dressing method for both Experimental and Control group
- Apply Aloe vera Gel over the wound for experimental group only with sterile spatula.

- Change the position of the subject with comfortable devices.
- Discard the soiled dressing materials and used gloves
- Wash hands.

Replace the articles

Document the procedure including wound characteristics like wound length and width, exudate amount and tissue type.